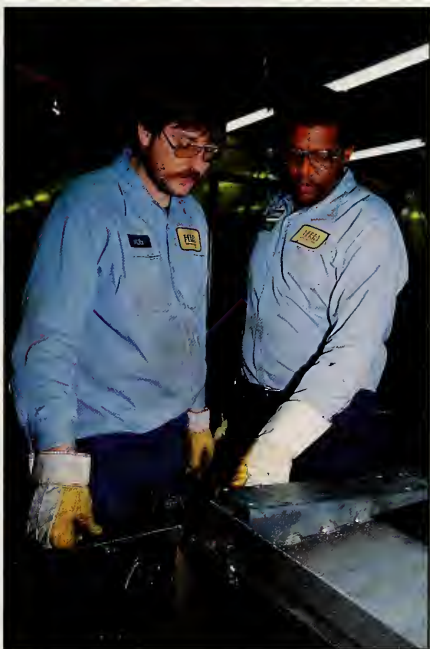# Indiana Vocational Technical College

IVYTECH

Indiana's Technical College

Central Indiana Region

Bulletin/1988-89

College Calendar

Fall 1988

August 22-September 2/Registration
September 5/Labor Day
September 6/ Classes Begin
November 2/Classes End

Winter 1988

November 17-23/Registration
Thanksgiving Break/November 24-25
November 28/Classes Begin
Holiday Break/December 22-January 4, 1989
February 24/Classes End

Spring 1989

February 27-March 2/Registration
March 6/Classes Begin
May 19/Classes End

Indiana Vocational Technical College

Indiana's Technical College

IVYTECH
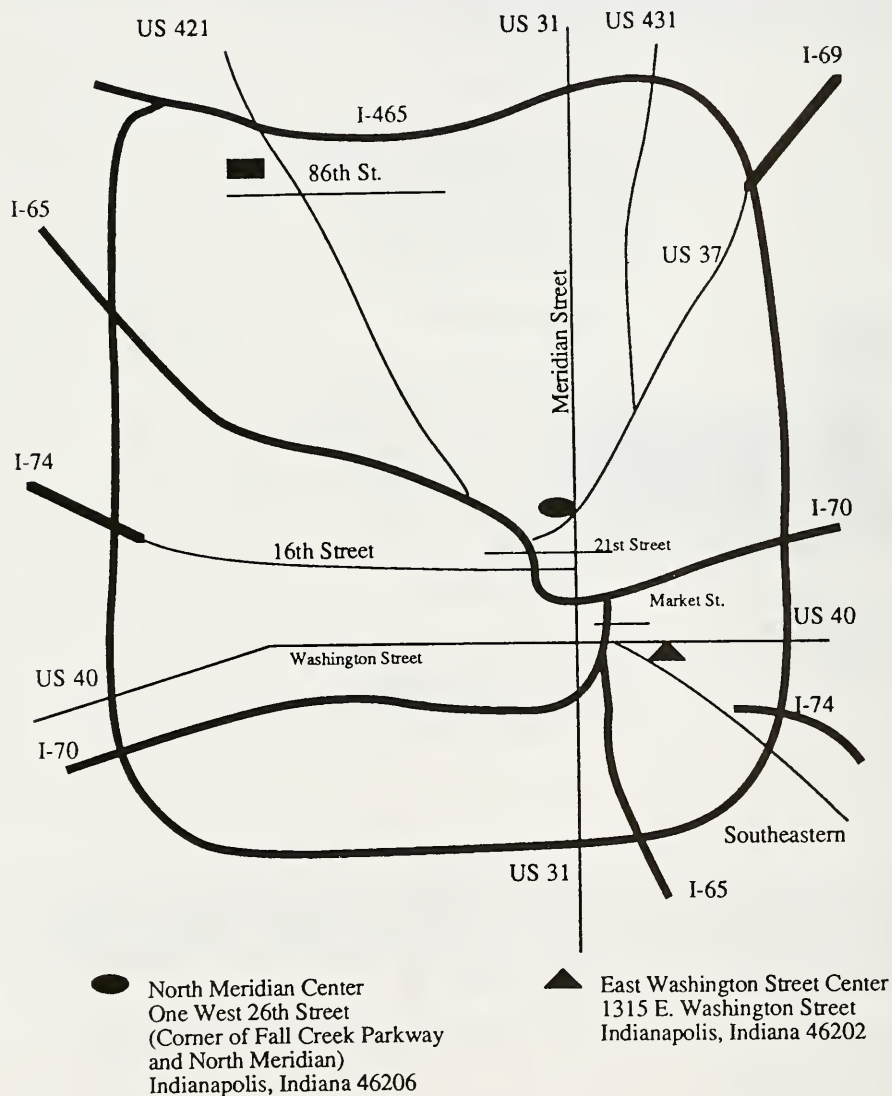**Indiana's Technical College**

One West 26th Street
Indianapolis, Indiana 46208
(317) 921-4800

The education programs, courses, description and frequency of courses, regulations, and fees shown in this bulletin are effective Fall Quarter 1988. This publication and its provisions are not in any way a contract between the student and Indiana Vocational Technical College. The college reserves the right to revise any section or requirement at any time.

Indiana Vocational Technical College at Indianapolis is an Accredited, Equal Opportunity/ Affirmative Action State College.

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How to get here from there!

US 421 · US 31 · US 431 · I-69 · I-465 · 86th St. · I-65 · US 37 · Meridian Street · I-74 · I-70 · 16th Street · 21st Street · Market St. · US 40 · Washington Street · US 40 · I-70 · Southeastern · US 31 · I-65

North Meridian Center
One West 26th Street
(Corner of Fall Creek Parkway
and North Meridian)
Indianapolis, Indiana 46206

(317) 921-4800

East Washington Street Center
1315 E. Washington Street
Indianapolis, Indiana 46202

A Message from the
Vice-President/Dean

The purpose of this bulletin, along with a variety of separate program brochures, is to describe the programs and services offered at Indiana Vocational Technical College—Central Indiana.

Indiana Vocational Technical College—Central Indiana operates two permanent campus facilities: The North Meridian Center at Fall Creek and Meridian and the East Washington Street Center at Washington Street and Oriental. The College also offers various courses at sites in each of the counties in the Indianapolis Metropolitan Area.

As you enter our classes, you will encounter a truly outstanding faculty and staff, noted not only for their expertise in the subjects they are teaching but for their personal interest in the students' success. Our intent is to assist in making your educational experience a highly successful one.

Many of you will come to our campus to take one or two courses for personal and professional enrichment. That's why we are here. Others might be preparing for careers by attending our one-and two-year collegiate technical and associate degree programs. That, too, is why we are here.

Indiana Vocational Technical College is the third largest state college in Indiana and has the reputation for offering high quality educational services at a reasonable cost.

On behalf of the Board of Trustees and the entire staff, I welcome you to Indiana Vocational Technical College and invite you to join our campus community.

Dr. Meredith L. Carter
Vice-President/Dean
Ivy Tech—Central Indiana

Table of Contents

Ivy Tech-
Indiana's Technical College

Indiana Vocational Technical College, popularly known as Ivy Tech, has grown from an idea to a thriving post-secondary institution. In 1963, the Indiana General Assembly established Ivy Tech as Indiana's first state-wide vocational technical college. Later amendments to the enabling legislation authorized Ivy Tech's present regional structure of thirteen administrative centers designed to provide accessible technical education opportunities.

The mission of Ivy Tech is stated in the authorizing legislation: "There shall be, and hereby is created and established, a new state post-high school educational institution to be devoted primarily to occupational training of a practical, technical, and semi-technical nature for the citizens of Indiana."

Across the state, some 25,000 students are enrolled each fall quarter in programs offered in the following instructional divisions: Business, Office and Information Systems Technologies; Visual Communications Technologies; Human Services and Health Technologies; and Applied Science and Technologies.

Ivy Tech's rapid growth and educational achievements can be attributed to its firm adherence to its mission and goals and to the strong support and encouragement from the state and community leaders.

Regional History

Ivy Tech-Central Indiana at Indianapolis, one of the College's 13 regions, opened its doors in 1966 to serve residents of Indianapolis and Marion, Morgan, Hancock, Johnson, Shelby, Boone, Hendricks, and Hamilton Counties. In 1966, 367 students enrolled in three technical programs; in 1987, 4,760 students enrolled in 33 areas of study. Further, state leaders in government and business are looking to Ivy Tech more than ever before to provide the skilled technicians that will attract new industry to the state.

Administration

Statewide, Ivy Tech is governed by an 11 member Board of Trustees appointed by the Governor. Under terms of the legislature, the trustees represent various economic interests- manufacturing, commerce, labor, agriculture, and the public-at-large. This board appoints the President of the College

In addition, each of the College's 13 regions, including Ivy Tech Central Indiana, has its own Regional Board of Trustees appointed by the State Board. The Regional Board members keep Ivy Tech in touch with local needs—both the needs of those seeking skills and the needs of industry.

Philosophy

All individuals, regardless of economic and social status, are entitled to be treated with dignity and respect and should be provided with opportunities to develop to their and society's ultimate benefit. Technical and general education are essential parts of an occupational curriculum designed to enable students to develop self-awareness and social responsibility to compete successfully in a chosen occupational field. Programming at Ivy Tech is directed toward serving the needs of all individuals within their community, as well as the needs of the community as a whole.

Accreditation

Ivy Tech is accredited by:
• Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools
• Indiana Commission for Vocational Technical Education
• Committee on Allied Health Education and Accreditation.

Ivy Tech's Division of Human Service and Health Technologies is separately accredited by the following agencies:
• American Association of Medical Assistants
• Association of Surgical Technologies, Inc.
• Indiana State Board of Nursing
• National League of Nursing
• Joint Review Committee on Education in Radiologic Technology
• Joint Review Committee of Respiratory Therapy Education
• Indiana State Board of Health
• Indiana Counselors Association on Alcohol and Drug Abuse (ICAADA)
• Indiana State Board of Registration and Education for Health Facility Administrators.

The College is also a member of the Indiana Conference for Higher Education, the American Association of Community and Junior Colleges, the Indiana Student Financial Aid Association, American Association of College Registrars and Admissions Officers, Association of Community College Trustees, Chef de Cuisine Association of Indiana, American Culinary Federation, Inc., American Institute of Design and Drafting, and National Association of College and University Business Officers.

The College is approved for the education of veterans, veterans' spouses, widow/ers, children, and/or orphans of disabled or deceased veterans who are eligible for educational benefits. The college is also endorsed by the Rehabilitation Division of the State of Indiana.

Facilities

The Ivy Tech-Central Indiana campus is comprised of three sites located east and north of downtown

Indianapolis. The region's Division of Business, Office and Information Systems Technologies, the Division of Human Services and Health Technologies and support services of the College share facilities with the College's statewide administration at the North Meridian Center, One West 26th Street (northwest corner of Meridian at Fall Creek Parkway). The Division of Applied Science and Technologies programs and various support services are located at the East Washington Street Center, 1315 E. Washington. The Extended Services office is housed at North Meridian Center, as well as in communities near Indianapolis. Many students enjoy the convenience of Ivy Tech's classes, offered in locations not more than 10 miles from their homes. The schedule of classes published each quarter lists the days, times and locations of Ivy Tech course offerings.

Wide Variety of Programs, Training Offered

Ivy Tech provides a wide variety of programs and credit courses in the Indianapolis facilities listed above and in 13 centers strategically located in the surrounding counties. Students may pursue their program objectives either full-time or part-time as their various life situations may require. The academic year is divided into four, 11 week quarters with breaks between quarters for counseling and registration.

The Associate Degree is awarded to students who have completed satisfactorily the required number of credits in an approved program and who are high school graduates or the equivalent. Associate degree programs are designed to prepare students for employment as qualified technical persons.

The Technical Certificate is awarded to students who have completed between 45-60 quarter credits in an approved program and who have satisfactorily completed all program course work. Technical Certificate programs are designed to provide students with skills for specific job classifications.

Ivy Tech-Central Indiana degree and certification programs are offered through three divisions of the College-Applied Science and Technologies; Human Services and Health Technologies; and Business, Office and Information Systems Technologies.

The General Education content of all programs is designed to enhance the student's ability to practice general citizenship and social responsibility in addition to complementing specific job requirements.

In response to the needs of Region 8 residents, Ivy Tech provides credit and non-credit training at a number of off-campus sites, such as hospitals, businesses, industries, high schools and agencies. Currently, more than 40 regular credit courses are being offered through a dual enrollment arrangement between the Adult Vocational programs and Ivy Tech at four sites in Central Indiana.

Office of Industrial Training and Development

Ivy Tech provides a variety of training programs through courses , seminars, and workshops requested by business and industry. In addition to regular credit courses, special training programs and business seminars unique to a company's needs are developed and presented by qualified Ivy Tech personnel. Employers seeking specific training for their employees may request a training program tailored to their needs, or they may enroll their employees in Ivy Tech's regular courses or programs.

General Information

Offices and Services

The following offices and services are available to assist students in successful completion of their courses of study at Ivy Tech.

Information Center: Provides general information and program brochures.
Phone Number: 921-4800
Hours: Monday -Thursday, 8:00 a.m. to 6:00 p.m.; Friday, 8:00 a.m. to 5:00 p.m.
Hours may vary with Registration. Please call Admissions at 921-4800.

Counseling Center: Provides counseling for admission and academic career planning. Also provides information on registration, programs, orientation, and testing.
Phone Number: 921-4800
Hours: Monday-Thursday, 8:00 a.m. to 6:00 p.m.; Friday, 8:00 a.m. to 5:00 p.m.
Hours may vary with Registration. Please call Admissions at 921-4800.

Veterans Affairs: Provides general information regarding veterans' programs, educational benefits, certification, V.A. Work/Study, tutoring possibilities, and fee remission.
Phone Number: 921-4700 or 921-4742.

Financial Assistance: Provides general information and counseling regarding the application for and award of college work/study, grants, scholarships, loans, and Pell Grants.
Phone Number: 921-4777

Bursar's Office: Receives payment for fees and transcripts. Disburses checks for V.A, grants, loans, and refunds.
Phone Number: 921-4944
Hours:Monday-Thursday, 9:30 a.m. to 6:00 p.m.(non-registration hours); 10:00 a.m. to 6:00 p.m. during registration hours; Friday, 10 a.m. to 5:00 p.m.

Developmental Studies: Provides individualized courses in the areas of reading, English and mathematics to help the student increase basic skills in mathematics, reading, spelling ability and writing skills. Students who have not earned a high school diploma may prepare for and take the GED examination.

A.C.C.E.S.S.: (Academic and Career Competence Through Educational Support Systems) Provides assistance to students who need additional academic help to succeed, beyond the services of Ivy Tech programs. Administered through the Developmental and General Education Department. The program also includes specialized testing, tutoring and counseling.
Phone Number: 921-4925.

Registrar's Office: Processes and maintains grade information, drop/adds, registration forms, student records, transcripts, and certification of graduation.
Phone Number: 921-4977.

Math Lab: Math Lab personnel work with students enrolled in Tech Math 1, Business Math and Math of Finance.
Phone Number: 921-4925(North Meridian Center); 269-9221 (East Washington Street Center).

Special Needs Supportive Services: Assists hearing impaired individuals in vocational, technical, and developmental studies. Assistance includes an instructor, and interpreters for the hearing impaired.
Phone Number: 921-4983 (TTY/VOICE)

Center for Single Parent/Homemaker Educational Services: Provides counseling, testing, and other services, such as workshops, and seminars, for single parents and homemakers.
Phone Number: 251-0041 or 921-4796

Computer Assisted Instructional Lab: Provides educational software tailored to adult learners and to enhance faculty awareness by incorporating software into their educational process.
Phone Number: 921-4972

Bookstore: The Ivy Tech Bookstore, at North Meridian Center and East Washington Center, sells required textbooks and supplies, gifts and other materials. Regular bookstore hours are Monday through Thursday, 9:00 a.m. to 6:00 p.m. and Friday, 8:00 a.m. to 4:30 p.m. During the first week of registration, the hours are Monday -Thursday, 8:00 a.m. to 8:00 p.m.; during the second week, 9:00 a.m. to 7:00 p.m. Friday hours remain the same.
Phone Numbers: 921-4782 (North Meridian Center); 269-9229 (East Washington Street Center).

Library/LRC: The Library/Learning Resource Center is a source of reference materials, leisure reading materials, materials related to all program areas of the College, career exploration materials, general magazines and newspapers, audio visual materials and equipment, interlibrary loans, textbooks on reserve for in-library use, reference service, library use assistance and pay photocopy machine.

Job Placement

The College Placement Office maintains records for all students interested in job placement assistance and prospective employers seeking qualified graduates of Ivy Tech's programs. Employers registering with the Office are provided with the names of all qualified candidates for employment without regard to sex, race, age, national origin, or non-disqualifying handicaps.

Students registered with the Placement Office have access to information on employment opportunities, assistance in preparing a credential packet, and assistance in obtaining copies of credentials to be released to prospective employers. Any students registered with the office can be interviewed by all prospective employers. Phone Number: 921-4880.

Parking

The College provides parking lots for students, visitors, faculty, and staff. Parking is on a first-come, first-served basis; maps and copies of parking rules are available through Security and General Information.

Personal Messages

The College cannot accept or deliver personal messages or telephone calls for students except in cases of extreme emergency. The College must know the extent of the emergency before attempting to locate the student.

Lost and Found

Lost and found items should be turned in and/or claimed in the Security Office.
Phone Number: 921-4806 (North Meridian Center); 269-9251 (East Washington Street Center).

Child Care

Ivy Tech provides child care facilities for children of students, faculty and staff. For more information call 921-4300.

Sharon's academic and vocational preparation at Ivy Tech brought us the type of mature employee that most benefits our structure and service. We have encouraged several of our current employees to take classes to increase both their skills and productivity. We are grateful for the availability of vcoational training and the placement office which helped us in meeting our needs.

P. Diane Jackson
Light of the World Christian Church

4

Financial Assistance

The following is general financial assistance information at Ivy Tech—Central Indiana.

If you have any questions regarding Financial Assistance call 921-4777 or visit the Office of Financial Assistance at North Meridian Center, One West 26th Street (Meridian at Fall Creek).

General Information

Indiana Vocational Technical College offers various types of financial assistance to students who want to continue their education. Some assistance programs are administered by the College Office of Financial Assistance under the policies and guidelines established by the State and Federal Government. Other programs are administered directly by a state or federal agency or an outside organization. Eligibility for most financial assistance at Ivy Tech is based upon the student's demonstrated financial need. Ivy Tech offers eight major student financial assistance programs: Pell Grants, Supplemental Education Opportunity Grants (SEOG), College Work-Study (CW-S), Higher Education Awards (HEA), Lilly Educational Endowment Awards (LEEA), Guaranteed Student Loans (GSL), Supplemental Loan for Students (SLS) or Parent Loan for Undergraduate Students (PLUS), and Ivy Tech Grants and Scholarships.

Eligibility

In general, you may be eligible for financial assistance if:
• you have been accepted for admission to the College in an eligible program on at least a half-time basis.
• you are a U.S. citizen or an eligible non-citizen.
• you have filed an Ivy Tech application for financial assistance which includes draft compliance and educational purpose statements.
• you are making satisfactory progress toward completing your course of study.
• you have submitted requested documentation to verify the data provided on the Financial Aid Form (FAF) or the Application for Federal Student Aid (AFSA).
• you have indicated acceptance of any awards by signing the Financial Aid Notification within deadlines specified by the Office of Financial Assistance.
• you do not owe a refund on a Pell Grant or a Supplemental Educational Opportunity Grant
• you are not in default on a Perkins Loan (formerly National Direct Student Loan) or Guaranteed Student Loan, or Supplemental Loan for Students.

Application Forms

Applications are available in the Office of Financial Assistance. Fall Quarter marks the beginning of the financial assistance award year. You may apply by filling out either of these forms: The College Scholarship Service Financial Aid Form (FAF) or the U.S. Department of Education's Application for Federal Student Aid (AFSA). You are strongly urged to let the financial assistance staff review your application before it is mailed. This will reduce your chances of making an error which could delay your financial assistance.

Student Aid Report (SAR)

If you apply for federal student assistance, four to six weeks later you will receive a Student Aid Report (SAR). The SAR reproduces the information you gave on your application.

Based on that information, the SAR shows whether you are eligible for a Pell Grant. If you are eligible, the Office of Financial Assistance at Ivy Tech will use the Student Aid Index number on your SAR to determine the amount of your Pell Grant. Even if you are ineligible for Pell Grant, check with the Office of Financial Assistance. The Office of Financial Assistance may be able to refer you to other forms of financial assistance.

Verification

Verification is a procedure whereby a school verifies certain items reported on the SAR. Ivy Tech currently verifies at least 30 percent of the SAR's submitted.

To complete the verification procedure, you must provide the following documents:
° A signed copy of your and /or your parents' most recent Federal Tax Return (1040, 1040A, 1040EZ).
° A Verification Worksheet.

If a SAR is found to have incorrect information, the Office of Financial Assistance will return the SAR to you with the corrections marked. You must then send it into the Pell Grant Processing Center. The Pell Grant Processing Center will in turn send you a corrected SAR.

If you received federal financial aid because you reported incorrect information, you will have to repay any portion of assistance you should not have received. Also, ANY PERSON WHO INTENTIONALLY MAKES FALSE STATEMENTS OR MISREPRESENTATIONS ON A FEDERAL AID APPLICATION IS VIOLATING THE LAW AND IS SUBJECT TO FINE OR IMPRISONMENT OR BOTH, UNDER PROVISIONS OF THE U.S. CRIMINAL CODE.

Transfer Student

If you transfer from one school to another, your financial assistance does not automatically go with you. To continue receiving assistance at Ivy Tech, you must check with the Office of Financial Assistance at Ivy Tech to find out what programs are available and what steps you must take. If you are attending or have attended another college and decide to transfer to Ivy Tech, you must have your prior school send a Financial Aid Tran-

script to Ivy Tech. If the Ivy Tech Office of Financial Assistance does not receive this transcript , you will not receive assistance from any financial assistance programs.

If you have a Pell Grant, you must get an official duplicate of your Student Aid Report to submit to Ivy Tech's Office of Financial Assistance. If you have a Guaranteed Student Loan, check with the lender to be sure you can continue your loan at Ivy Tech.

If you have a Supplemental Educational Opportunity Grant, or a College Work-Study job, check with the Office of Financial Assistance at Ivy Tech to find out if funds from these programs are available.

Student Responsibilities

It is your responsibility to:

• Review and consider all information about a school's program before you enroll.

• Pay special attention to your application for student financial assistance, complete it accurately, and submit it on time to the Office of Financial Assistance. Errors can delay your receiving assistance.

• Provide all additional documentation, verification, corrections, and/or new information requested by either the Office of Financial Assistance or the agency to which you submitted your application.

• Read and understand all forms that you are asked to sign and keep copies of them.

• If you have a loan, notify the lender of changes in your name, address, or school status.

• Perform in a satisfactory manner the work that is agreed upon in accepting College Work-Study job.

• Know and comply with the school's refund procedures.

Course of Study

A student is expected to complete a chosen course of study at Ivy Tech within the designated maximum time frame. Pursuing a course of study is to enroll and attend classes within a program and work toward the Associate in Applied Science degree or Technical Certificate.

Standards of Progress

To continue to receive financial assistance, a student must be enrolled in a sufficient number of hours to be eligible. All students must maintain the College approved Standards of Progress. The Office of Financial Assistance will monitor, quarterly, each student recipient's grade point average (GPA) and the number of credit hours completed. A student is expected to complete an Associate Degree or Technical Certificate within a reasonable time frame.

If there are questions regarding probationary enrollment or the suspension of financial assistance, a student should contact the Office of Financial Assistance for information about appeal and/or reinstatements procedure.

Appeal Procedures

Students whose financial assistance benefits are suspended have the right to appeal the decision. The Appeals Committee includes Ivy Tech employees who do not work in the Office of Financial Assistance.

To file an appeal, students should pick up a blank appeals form in the Office of Financial Assistance, complete the form as indicated and return the form to the Office of Financial Assistance. The decision of the committee will be mailed to the student.

Refunds to Financial Assistance Recipients

Except for GSL, no financial assistance funds will be released to the student until after the refund period. The amount of any awards which are affected by changes in enrollment status during the refund period will be adjusted accordingly. For GSL recipients, a portion of the refund may be returned to the lender.

Admissions

Indiana Vocational Technical College will seek to develop degree credit programs, courses, and community service offerings and provide for open admission counseling and placement service for all individuals regardless of race, color, creed, religion, sex, national origin, physical or mental handicap, age or veteran's status. Furthermore, the College will intensify its concern and elevate its professional competence to the elimination of the conditions from which discrimination springs.

General Admissions (Non-Degree Objective)

Ivy Tech offers courses in many special interest areas, including college preparation. For those who plan to take the GED test, the College offers GED preparation. Persons interested in taking any of the numerous Ivy Tech courses are invited to do so. Admission as a non-degree student is quick and easy and can be accomplished as part of the registration process.

General Admissions (Degree Objective)

For admission as a regular student in one of Ivy Tech's programs leading to an Associate of Science, Associate in Applied Science degree or Technical Certificate each student must submit a graduate high school grade transcript or a copy of successfully completed GED scores. This must be done in the first quarter of admission to a program.

Applicants will participate in assessment testing. * The purposes of the testing are to measure the student's ability to benefit from a selected program and to determine the appropriate placement in Ivy Tech courses. Admission standards will be satisfied if the assessment testing reveals that the applicant has the basic skills needed for success n the chosen program. If the tests reveal skill deficiencies, appropriate developmental course work will be provided.

The College will guide the enrollment of students in particular programs, or courses, on the basis of prior academic records, vocational counseling and testing.

*Testing may be waived if the applicant submits either:

a. an official transcript from an accredited post-secondary institution indicating achievement consistent with Ivy Tech's admission standards;

b. acceptable standardized test scores (i.e., SAT,ACT).

Limited Admission and Enrollment

The number of students admitted and enrolled in programs and/or courses may be limited by one or more of the following factors:

1. College financial resources;

2. facilities, including available lab equipment and related support;

3. the number of available health program clinical work stations.

Some programs have pre-requisites or entrance requirements based on skill levels and prior knowledge. Selected programs may require a completed health examination form signed by a medical doctor.

Transfer Students

Students admitted from other recognized colleges and universities may be awarded credit at Ivy Tech for completed courses that apply to the chosen program of study. These students may present an official transcript from the institution previously attended and have proven they have met general admission requirements. The College reserves the right to refuse admission, or to accept conditionally, those students who have been dismissed for disciplinary reasons form other colleges or universities, including other regions of Ivy Tech.

Transfer of Credits

Ivy Tech programs are complete in themselves. Some students do transfer credit successfully. However, it is the right and responsibility of the receiving institution to decide whether or not to accept credits from Ivy Tech or any other institution. If a student plans to transfer, he/she may wish to check with the other institution before enrolling at Ivy Tech to get specific information about that institution's policies on credit transfer.

International Students

Ivy Tech admits qualified students from other countries. International students must meet College admission requirements and specific International admission procedures.

For more information on admission of international students please contact the International Student Advisor in the Office of Admissions.

Handicapped Students

College programs and facilities are accessible to students with physical handicaps. Designated parking and special restroom facilities are available. Support services are also available to aid handicapped students with career planning, financial aid, personal counseling and placement. The College staff works with the Department of Vocational Rehabilitation and other service agencies to assist physically and psychologically impaired students through available local community resources.

Students with handicaps are urged to contact the Office of Student Services at 921-4800 for help with their special problems as students at Ivy Tech.

Orientation Program

All new students are encouraged to participate in an orientation program prior to or during the first quarter of classes. The purpose of the orientation is to assist students in making the transition to the College environment. Topics include student services, financial aid, business services, instructional programs, College activities, and College policies and procedures. The orientation program may also include, if not yet completed, testing, interviews, evaluation, counseling, program advising, determination of advanced standing status, and scheduling of classes.

The Office of Student Services offers counseling to all interested students. Students may obtain individual counseling and/or assessment to assist them in identifying their abilities or occupational interests or in developing realistic education or career plans from occupational outlook data. Students wishing assistance in selecting an occupation and the necessary training may contact Admissions at 921-4800.

Academic Advising

A faculty advisory system complements the counseling program provided by the Office of Student Services. Each student, on admission to the College, is assigned a faculty advisor whose purpose is:

1. to assist the student in course selection and program planning.

2. to guide the student in meeting the requirements for graduation as prescribed by the College.

3. to ensure that appropriate technical and general education electives are included in the chosen course of study.

The College encourages close cooperation among students, faculty, and staff. Some counseling is available on an unscheduled basis; however, students are encouraged to schedule appointments with counselors in advance at the Office of Student Services.

Assessment Testing/Services

All students should attend an assessment session before being admitted into a program. These assessments are used to assist in determining program and course choices of maximum benefit to the student. Ivy Tech offers a variety of assessments to assist students with career planning and program placement. Students can also receive help in career selection through counseling and testing. Career testing is used only for student guidance, not for admission selection. Adults who have been out of school for some time are encouraged to complete the Testing program to assist them in determining their career goals and planning their courses of study. A fee may be charged to cover the cost of administering some of the tests and assessments. Students with previous college credits should submit an official college transcript, which may be used in lieu of testing.

Alternative Methods of Earning Transfer of Credit

Most Ivy Tech students earn credit at the College by officially enrolling in and acquiring the competence identified for each course. There are other ways of earning Ivy Tech credit, however. Some students have attended other colleges or universities and request a transfer of credit. Credit transfer is accomplished when the student arranges with his/her former institution to send an official transcript to the Registrar's office at Ivy Tech. This transcript is evaluated for all courses relevant to the student's chosen field. A student must have earned a C or better in any course he/she wishes to transfer to Ivy Tech. The course must also be from an institution that is accredited by one of the five major accrediting bodies in the United States. There is no overall expiration deadline for courses to be transferred; however, each program chairperson/evaluator uses his/her judgment as to the recency of a course's knowledge and skills. Official transcripts need to be submitted for evaluation to the Registrar's Office no later than the first quarter of enrollment.

Test-out Procedures

The policy regarding testing out of classes varies from program to program; therefore, a student wishing to test-out of a class should contact the program advisor before registering for the class.
A fee will be charged for test outs.

The general guidelines for test-out are as follows:

1. Test-out examination should be taken before registration for the class for which the test-out is attempted.

2. Test-out examination should be taken and completed at one sitting (unless the test is offered in two parts, i.e., lab and written exams).

3. Test-out examinations for specific courses may be attempted only once.

4. Test-out credits may not be included in credit computations for a financial assistance program.

Credit for Work Experience

Students who believe that occupational experience has enabled them to acquire the proficiencies and competence to meet the objectives of a particular college course, or several courses, may request an evaluation of this work experience for advanced standing. Credit for work experience is awarded only for well-documented, measurable evidence of accomplishment. Students seeking to acquire credit for work experience should be prepared to submit evidence such as a portfolio of architectural or machine drawings, and documents

showing that they have dealt with a particular problems skillfully, or other like and appropriate data.

Registration

The registration process includes program counseling, selection of classes, and payment of fees. Newly admitted students will be notified as to when to register for their first quarter classes.

Specific days are set aside prior to each quarter for registration. Students are advised to seek assistance in course selection from faculty advisors or counselors in the Office of Student Services prior to registering for classes.

Anyone registering after classes begin must have instructor's permission and will be charged a $10.00 late fee.

Please contact the Office of Student Services for information concerning registration procedures.
NOTE: STUDENTS ARE NOT REGISTERED UNTIL FEES HAVE BEEN PAID.

Withdrawal Procedure

Withdrawal is defined as the act whereby a student officially files a withdrawal form and discontinues course attendance. To be considered officially withdrawn from a course, the student **must file a withdrawal form with the Registrar's Office. TERMINATION OF CLASS ATTENDANCE DOES NOT CONSTITUTE AN OFFICIAL WITHDRAWAL. Students can withdraw from class through the sixth week of each quarter. Thereafter, no student withdrawals will be accepted.**

AW-Administrative Initiated Withdrawal

If you attend at least one class session but then miss two or more class sessions, your instructor may recommend an "AW" designation. This is a permanent grade designation that will be reflected on your official transcript. The AW will be used to calculate GPA as if it were an F.

NW- No Show Withdrawal

If you do not attend a class for which you are registered and have paid fees, the instructor will recommend an "NW" status. The NW cancels your registration in that class and removes your name from the class list.

If you have financial assistance, it will be cancelled and you will be charged for the classes. To prevent this situation from occurring it is important for you to sign a drop/add with an SW within the first week of the quarter.

SW-Student Initiated Withdrawal

If you must withdraw from a course, an SW will be given if a drop-add form is completed and submitted to the Registrar's Office prior to the end of the sixth week of the quarter.

Note: If you are receiving Financial Assistance, please check with that office as many of the above may affect your benefits.

Enrollment Status

Registration dates are publicized well in advance of each new quarter. The following designations are used to determine a student's enrollment status.
Full-time student: (12 or more credits per quarter)
3/4 time: (9-11 credits per quarter)
1/2 time: (6-8 credits per quarter)
Less than 1/2: (1-5 credits per quarter)

A first year student, by definition, is one who has completed up to 45 program specific credit hours; a second-year student is one who has completed 46 or more program specific credit hours.

Fees

Ivy Tech's costs are among the lowest of any college in Indiana. Persons enrolled in Ivy Tech courses are charged a general fee per credit hour. In addition, charges are assessed as they apply to various courses, divisional fees, and certain College activities. Tuition and fees are subject to change without prior notice by the Indiana Vocational Technical College State Board of Trustees.

Schedule of Tuition and Fees for 1988-89(as of 4-88)

General Fee
Indiana Residents: ($28.55 per credit hour)
Tuition: Out of State Students
($53.60 per credit hour)

Divisional Fees
Division of Business, Office and Information Systems Technologies
($1.25 per credit hour)
Division of Visual Communications Technologies
($4.25 per credit hour)
Division of Human Services and Health Technologies
($1.25 per credit hour)
Division of Applied Science and Technologies
($2.00 per credit hour)

Student Activity Fee

The Student Activity Fee varies by enrollment status and region. This fee is a part of the required total tuition cost. The Student Activity Fee is used in a variety of ways and positively affects the students.

Veterans Information

The Veterans Administration determines eligibility for all veterans. Eligible recipients of veteran's benefits are entitled to one-and-a-half months of educational assistance for every month of active duty (after January 31, 1955), up to the maximum of 45 months. Educational benefits may be used within 10 years from
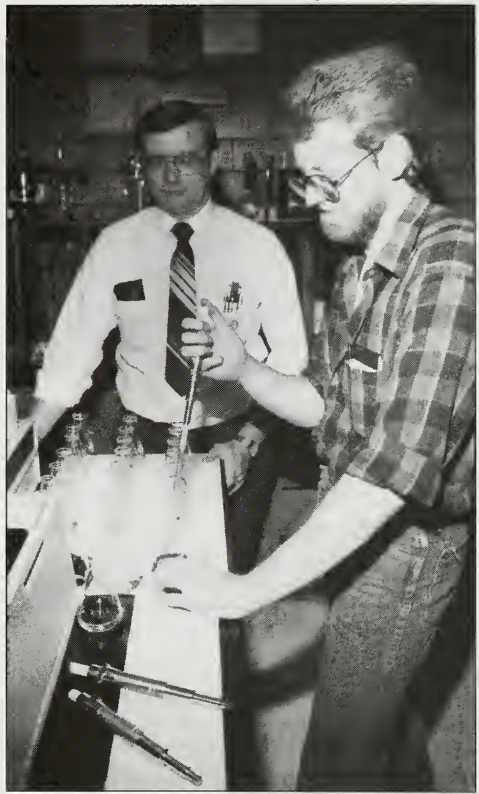
release from active duty.

The amount of monthly educational allowance depends on the number of dependents and the training time. For Associate in Applied Science degree students, training time is based on the number of credits taken; for Technical Certificate students, training time depends on the number of credit hours.

The Office of Veterans Affairs provides assistance with VA forms and counseling.

Refund Policy

Students wishing to withdraw from any courses must notify the College Student Records Office (Registrar's Office) of their intent to withdraw. The request must be in writing on the College Drop/Add form which may be obtained from the Program Chairperson, Counseling Office or from the Student Records Office.

NOT ATTENDING CLASS DOES NOT CONSTITUTE AN OFFICIAL WITHDRAWAL.

The refundable amount of the fee assessment is determined upon the date the drop request is received by the Student Records Office and the beginning date of the class. Late registration fees are non-refundable. College initiated cancellations of courses will result in total refunds. Drop forms received by the Student Records Office during:

Registration through the **first** week of the class result in a 100 percent refund.

Second week of the class result in a 50 percent refund.

Third week of class result in a 25 percent refund.

No refunds issued after the third week of class.

Fees regained by the College may be applied to courses for the same quarter.

Students who have financial aid deferments (Pell Grants) are responsible for any balances should they drop courses during the refund period. The balance owed must be paid upon receipt of a College invoice.

Refund checks are mailed to the address on the student registration form. They are normally mailed prior to six weeks from the date of the drop. Any fee, funds, or charges owed to the College will be deducted before the refund balance is determined.

Grading System

The student grading system consists of letter grades A-F. Letter grades reflect the quality of performance and achievement of competency by students who complete a course. In addition to grades, status codes are utilized as a condition for which no quality points are assigned. Instructors determine and assign both grades and status based upon appraisal and evaluation of students' performance. Students receive quarterly reports of their grades and status.

Grade Designations

Grade Designation	Descriptions	Points
A	Excellent	4
B	Good	3
C	Average	2
D	Min. Passing	1
F	Failure	0
AW	Non-Completion Failure to Attend	0

AW-Administrative Initiated Withdrawal

Students who have attended at least one class session and who have been absent for two or more class sessions may be recommended as an "AW" by the instructor with final approval from the program chairperson unless the instructor has documentation that the student is still actively pursuing the course. Proper documentation may include completed papers, exams, quizzes, projects.

However, students who wish to appeal the action based upon legitimate reasons (illness, vacation, guard duty, etc.) for such absences should meet with the instructor no later than two weeks after mid-term date and demonstrate why the AW should be removed. The instructor may then recommend reinstatement with the approval of the Division Chairperson or Dean of Instructional Affairs and make assignments enabling the student to complete the course. Copies of this documentation must be given to the Registrar and Financial Assistance Office.

If the AW remains on the student's record, it will be used to calculate GPA as if it were an F with zero quality points per credit.

Students who have received an AW may not later elect to use the SW (See Non-Grade Designations-Status Conditions).   •

Non-Grade Designations—Status Conditions:

Status	Description	Points
I	Incomplete	0
NW	No Show Withdrawal	0
SW	Student Initiated Withdrawal	0
AU*	Audit	0
S**	Satisfactory	0
U**	Unsatisfactory	0
T	Transfer	0
V	Verified Competency	0

* must be declared at time of registration
** Non-program related courses only—must be declared at time of registration.

These non-grades are used for the following reasons.

I-Incomplete

"I" designations are received by students who have actively pursued a course and are doing passing work at the end of the course, but who have not completed the final examination and /or other specific course assignments.

To remove an "I" designation, a student must meet with the instructor to make arrangements to complete the course work. The instructor must submit the grade within 30 calendar days after the end of the following term in which the student received the "I" designation. If the instructor is not available, the program/department chairperson is responsible for assigning a grade. Longer periods may be granted, if authorized in writing by the Dean of Instructional Affairs. If an "I" grade is not removed within the aforementioned time period, an appropriate grade (A,B,C,D,F) will be assigned based only on course requirements completed. Students who have an "I" grade on their records may not re-register in that specific course. However, if the "I" is changed to an "F", the student may then re-register only once for that course in order to earn a passing grade.

NW- No-Show Withdrawal

"NW" will be used for No-Show Withdrawals. Instructors may withdraw a student from any class for which the student did not report for the first two weeks of the quarter and failed to notify the instructor of intention to continue. This administrative action cancels the student's registration in that course and the student's name will be deleted from the official class list. Financial Assistance recipients will lose their financial assistance and owe the College fees.

If circumstances warrant, a "NW" student may be reinstated. This could happen, e.g., if a student received a NW as described above and subsequently began attending on a regular basis. In such a case, the student must receive the approval of the instructor and must complete the drop/add process to be reinstated in the class. Students wishing to withdraw for that quarter whould initiate a Student Withdrawal (SW) to avoid the penalties of the NW.

SW-Student Initiated Withdrawal

When students find it necessary to withdraw from course(s), they must give formal notification to the

Registrar at the College and complete appropriate forms.

Students may officially withdraw from a course(s) at their own request through the sixth week of a quarter without receiving a failing grade(s). The student's advisors should be consulted and proper forms completed. These forms are available in the Counseling and Admissions or Records Offices of each region. Thereafter, a student may withdraw only if documented extenuating circumstances are submitted to and approved by the Vice President/Dean or his designee. The "SW" non-grade designation will be entered on the student's academic records.

Students who receive an "AW" may not later elect to use the "SW".

AU-Audit

An"AU" indicated enrollment is a course for no grade or credit. The fees for audited courses are the same as those for courses taken for credit. Audit status must be declared at time of registration with the approval of the Instructor or Program Chairperson. Students taking a course for credit requirements will have priority over audit students if class size is limited.

S- Satisfactory

The "S" indicates satisfactory completion of course work in situations where either a status of satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading-S/U-can only be made for non-program related courses and must be declared at time of registration. Courses graded with "S" or "U" status can not be used to satisfy program requirements for degree declared students.

U- Unsatisfactory

The "U" indicates unsatisfactory completion of course work in situations where either a satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading-S/U-can only be made for non-program related courses and must be declared at time of registration. Courses graded with "S" or "U" status can not be used to satisfy program requirements for degree declared students.

T- Transfer

The "T" is used to indicate credits transferred to Ivy Tech from other accredited post-secondary institutions. Transfer credit is assigned following an evaluation of equivalence/relevance and is authorized providing the credits were earned with grades of A, B, or C. Final authority of "T" credit is with the Dean of Instructional Affairs, upon recommendation of the department/program head.

V-Verified Competency

The "V" indicates satisfactory completion of course work in situations such as test-outs, credit for experience, CLEP, experience for secondary work completed through articulation agreements, etc. This status is approved by the Dean of Instructional Affairs, upon recommendation of faculty advisor, following completion of necessary verification and documentation of competency.

Mid-Term Grades (Optional)

Instructors may assign mid-term grades to students in each course. The grades are to be submitted no later than the sixth week of the quarter.

Students taking prerequisite courses must receive C or better in that course in order to register in the next level course. It is the responsibility of the faculty advisor to verify satisfactory academic progress. However, students may register in other courses not requiring prerequisites.

Student Class Attendance—IMPORTANT

Nonattendance may result in the nonattainment of course objectives and, consequently, in failure grades. Students with financial assistance who fail to attend the classes will lose their financial assistance and owe the College fees. Students who miss class sessions must check with instructors about their standing in the course. Faculty are encouraged to follow-up students who miss two consecutive weeks or less and do not contact the instructor. The names of all student missing two consecutive weeks will be forwarded to the Student Services Office for additional follow-up.

Academic Standards

Course of Study

A "course of study" at Ivy Tech is defined as an identified series of courses leading to an educational/career goal. Pursuing a course of study is to enroll and attend classes within the approved program and work toward an AS, AAS, or TC. Certification requirements for a course of study include: required technical courses, required general education courses, and regionally determined electives.

Grade Point Average

Grade point average (GPA) is an accumulative average of a student's grades. All Ivy Tech coursework, with the exception of skills advancement courses, completed by the student with assigned letter grades of A,B,C,D, F or AW contributes to the cumulative grade point average. Status of I,T,S, U,AU, V, SW, NW, etc., are not included in the grade point average. Both the quarterly and cumulative GPA's are obtained by dividing the total number of quality points earned by the total number of credits earned in approved courses. When a

student repeats a course, the cumulative grade point average will reflect only the highest grade achieved in that course. Also, in such cases, the number of credits earned will apply only to the course for which the highest grade was achieved.

Under extenuating circumstances (mis-advisement, etc.), a student may petition the Academic Status Committee to exclude certain course work (up to 15 quarter hours) from the cumulative GPA calculation. The petition must be presented to the committee within two quarters of the time the courses to be excluded were taken. Any courses that have been excluded from the cumulative GPA calculation will be counted as attempted, but not earned and can not be used to satisfy program requirements for degree declared students.

Program Specific Accum

The cumulative Program Specific Accum (PSA) is calculated on the basis of all courses in which a student received grade designations toward the course of study. A 2.0 cumulative PSA in all courses required for the course of study (general education, technical courses, electives) is the minimum qualification for graduation or program completion. When appropriate , and approved by the Dean of Instructional Affairs, course work receiving non-computable status of T (transfer credit) or V (verified competency credit) may be counted as credit toward degree completed.

Minimum Cumulative Grade Point Average

Students who have declared a certificate/degree objective and who have six or more cumulative grade hours attempted must maintain the following minimum cumulative GPA to be considered in satisfactory academic standing:

Quarter Hours Attempted	Minimum Cumulative GPA Required
6-15	1.50
16-30	1.75
31-45	1.90
46 or more	2.00

Quarter Hours Attempted	Minimum Cumulative PSA Required
46 or more	2.0

Academic Status

Academic status will be calculated for students who have six or more cumulative earned hours toward their chosen course of study. Earned hours include: all grades A-F; all AW's; and the highest grade achieved n any repeated courses.

It is the responsibility of all students enrolling in six or more credit hours in a given quarter to have any earned credits from other colleges submitted for evaluation by the College's Registrar by the midpoint of the first quarter of registration. This information will be rendered on the student's records by the end of the first quarter. All students enrolled for a certificate/degree must satisfy the College's prerequisite for the program prior to enrollment.

Credit hours which are not used to calculate GPA and PSA and which do not count toward graduation include:
—all NW's, and SW's
—AU's
—I's
—S's
—U's
—Basic Skills Advancement Courses
—Occurrence(s) of a repeated course(s) with the lowest grade(s) achieved.

Although transfer credits from other colleges/universities may be counted towards graduation, these credits are not used to calculate cumulative GPA and PSA.

Students who have difficulty maintaining the appropriate minimum GPA and/or PSA must see their faculty advisor or consult the Office of Student Services at their region for advice and assistance.

Standards of Progress

Students who do not achieve the minimum GPA and/or PSA (see Minimum Cumulative Grade Point Average above) at the end of each quarter of enrollment are failing to meet the college's standards of progress and will be placed on Academic Probation for the following quarter. However, students will be considered to be in good academic standing in the first quarter of Academic Probation with the understanding that they must raise their cumulative GPA/PSA to meet the minimum cumulative GPA/PSA in the next quarter/term. Students failing to meet standards of progress will be subject to specific enrollment restrictions including early registration for the following quarter.

A student who is not meeting standards of progress is: restricted to enrollment in no more than twelve quarter hours of new course credits and not more than a minimum total of fifteen quarter hours during any quarter in the College. If enrolling in more than twelve quarter hours in regular quarter credits, a student will be required to repeat a course or courses in which he/she 'received a grade of D or F.

Failure to meet standards of progress for one quarter may also result in one or more of the following:
a. Required attendance at special counseling sessions.
b. Enrollment in skills advancement courses.
c. Disqualification for graduation.

Students who are not meeting standards of progress and who do not improve by the end of the next quarter/term shall not be allowed to register for the following quarter. "No improvement" means the student has not achieved the applicable minimum cumulative GPA/PSA required in accordance with this Academic Standards Policy or has not successfully completed at least six credit hours and attained a 2.00 or better quarterly GPA for the probationary quarter. Students attaining a 2.00 quarterly GPA for the probationary quarter will be allowed to enroll but will remain on Academic Probation until attaining the minimum cumulative GPA required in accordance with this Academic Standards Policy. Following the quarter of non-enrollment, a student may re-enroll as a degree/certificate seeking student with an Academic Probation although the student can not receive Title IV financial assistance. Students may re-enroll at any time on a non-degree seeking or skills advancement basis. Students will be terminated from the College for five years if prevented from enrolling twice on an Academic Probation status unless they choose to participate in a extensive skill advancement program to correct academic deficiencies.

Students who are not allowed to register at one of the regions may not register at any of the other regions; however , they may petition for re-admission at the college (region) which they originally attended. The re-admission petition may be approved by the administration for good and sufficient reason by the College's Academic Status Committee.

In addition, failure to meet the standards of progress will result in one or more of the following:

  a. Discontinuance of financial assistance eligibility.
  b. Discontinuance of Veterans' benefits.
  c. Attendance at special counseling sessions (when a student is not making satisfactory progress, the academic advisor may counsel the student to consider another program more suited to the student's interests and abilities).
  d. Enrollment in skills advancement courses only.
  e. Limiting or reducing course load.
  f. Disqualification from graduation in the student's program.

Repeating Courses

When a student repeats a course (allowable once in most programs for D, F or AW grades), the highest grade received shall be counted in the student's cumulative GPA and PSA if applicable. In unusual circumstances, the student may petition the Dean of Instructional Affairs to grant special permission to repeat a course more than once and have highest grade count.

Academic Probation

A student is placed on academic probation when he/she fails to maintain a GPA of 2.0. At this point counseling and/or advising may intervene. Students are automatically removed from probation if satisfactory progress status is made. For further information, contact the Office of Student Services.

Special Problems

Students with special problems should work with an Ivy Tech counselor to resolve the problems.

Graduation

The degree of Associate in Applied Science or other appropriate certificate is awarded by the College to students who meet graduation and certification eligibility requirements. Graduation ceremonies are held once a year. Graduating students are charged a fee to cover the cost of ceremonial cap and gown.

Each student entering the final quarter of training prior to graduation will complete an Application of Graduation. The application will be certified by the student's advisor and forwarded to the Registrar's office where the appropriate diploma will be prepared. Diplomas will not be prepared for students failing to make application for graduation.

A student is considered eligible for graduation when he/she fulfills the requirements for graduation and certification eligibility at his/her program level.

To graduate with an Associate in Applied Science Degree, the student must:

  1. attain a grade point index of 2.0 in the required technical and general education courses, with not more than one course in each of these areas at a "D" or lower performance level;
  2. complete successfully all courses within certification requirements with a grade point index of 2.0;
  3. earn the last 15 credits as a regular student of Ivy Tech, rather than by test-out or other means of advanced placement;
  4. complete successfully the Ivy Tech certification requirements;
  5. satisfy all financial obligations to the College.

To graduate with a Technical Certificate, the student must:

  1. attain a grade point index of 2.0 in the required technical courses with not more than one course at a "D" or lower performance level;
  2. complete successfully all courses within certification requirements with a grade point index of 2.0;
  3. earn the last 15 credits as a regular student of Ivy Tech , rather than by test-out or other means of advanced placement;
  4. complete successfully the Ivy Tech certification requirements;
  5. satisfy all financial obligations to the College.

Placement

The Placement Office at each region of Ivy Tech assists registered graduates and students in finding jobs. Interested students should register for placement assistance at the Office of Student Services, which will:

    1. advise candidate of the College placement service;

    2. distribute registration forms for the placement service;

    3. provide occupational information, including employment trends and local and state occupational outlook data;

    4. assist the registered candidate in preparingpacket of credentials for use in finding a job. The packet may include:

        a. a resume of candidate's education and employment experience;

        b. personal letters of recommendation verifying the student's employability;

    5. maintain original copies of the candidate' s credentials;

    6. prepare copies of credentials released by the candidates for referral to prospective employers. Alumni may update their credentials whenever they wish to use the placement service.

Student Conduct

Standards of Conduct

Students enrolled at Indiana Vocational Technical College are expected to conduct themselves in a mature, dignified, and honorable manner. The reputation of the College in the community depends in large part upon the behavior of its students.

Students are subjected to College jurisdiction on College matters during their period of enrollment. The College reserves the right to take disciplinary action against any student whose conduct, in the opinion of Ivy Tech representatives, has not been in the best interest to other students or the College. Disciplinary action may consist of verbal reprimand, restitution for damages, restriction of privileges, suspension, dismissal, denial of admission or re-admission. Students, in turn, have the right to due process.

All Ivy Tech students are expected to abide by the following rules of conduct:

College Rules

    1. Possession or Influence of Alcoholic Beverages

        Any student found guilty of drinking, being under the influence of or possession of intoxicating beverages on College property is subject to disciplinary action and state law. •

    2. Illegal Use of Drugs

        The illegal use of drugs is strictly prohibited on College property. Any student found using, under the influence of, in possession of, or distributing illegal drugs is subject to disciplinary action and state law.

    3. Smoking

        Students may smoke in private offices, conference rooms, and other areas as designated by the Vice President/Dean. Smoking is generally prohibited in carpeted areas and in posted "no smoking" areas in accordance with fire regulations as well as consideration of campus environment.

    4. Assembly

        Persons shall not assemble in a manner that obstructs the free movement of others about the campus, inhibits the free or normal use of the College buildings and facilities, or prevents or obstructs normal operation of the College.

    5. Signs

        Students may not erect signs on campus or display signs or posters except on designated bulletin boards, without the authorization of the Vice President/ Dean or his designee. Also, students shall not deface, alter, tamper, destroy, or remove any sign or inscription on College property.

    6. Solicitation of Funds

        No student organization may use campus facilities or schedule activities to solicit funds without the approval of the Vice President/Dean or his designee.

    7. Arms/Deadly Weapons

        Firearms (except for those possessed by police officers) are strictly prohibited on College property or at any College sponsored activity held elsewhere. Any student possessing deadly weapons at these locations is subject to disciplinary action.

    8. Cheating

        Any student found cheating on papers or tests is subject to disciplinary action. Such action may be taken in accordance with College procedures as deemed necessary to the instructor.

    9. Counterfeiting and Altering

        Students shall not copy or alter in any manner, shape or form any record, document, or identification form used or maintained by the College.

    10. Theft of Property

        Any theft of personal or College property will be treated as a violation of College rules.

    11. Vandalism

        The destruction or mutilation of College books, magazines, equipment, or building is prohibited. Such action may result in restitution and/or other disciplinary measures.

    12. Use of College Facilities

        Students are permitted on campus during normal College hours and at other times established in the College calendar. Students wishing to utilize College facilities at other times must request permission from the

Vice President/Dean or his designee

13. Financial Responsibility

Students owing fees, fines, or loans shall not be permitted to register for a succeeding session. Grades, records, degree, etc., will not be awarded until debts to the College are paid.

14. Misuse of Motor Vehicles

The College has established student, staff, and visitor parking. All persons are required to park in designated areas and to adhere to College parking regulations. Posted speed limits must be obeyed.

15. Harassment

Any student harassing students or staff will face disciplinary action.

16. Physical or Verbal Altercations or Abuses

No student may strike or threaten other students or College personnel or disrupt or interfere in any way with the educational process of other students or the College staff.

Violations

Persons found in violation of laws and ordinances on College property shall be subject to prosecution by law enforcement official(s).

Persons found in violation of College regulations shall be subject to disciplinary action by the College through due process procedures for student conduct violations.

The College maintains jurisdiction over matters such as, but not limited to, alcoholic beverages, illegal use of drugs, smoking, financial responsibilities, motor vehicles, assembly, soliciting, use of College facilities, the posting or erection of signs, theft, arms/deadly weapons, harassment, cheating, counterfeiting, and vandalism.

Due Process Procedures

Due Process provides the College an appropriate mechanism to deal with violation of student conduct and conversely allows a student with a disagreement to grieve against a College personnel's decision affecting that student. The intent of due process is to provide a process or procedure for unbiased review of a particular case or situation. **The intent, rather than the mechanism, is the focus of this process. Thus, exceptions to the specifics and mechanisms can and will be made.**

Due Process Procedures for Student Conduct Violations

Generally in the due process a College staff member will point out unwanted or unfavorable behaviors. If the behavior is in violation of acceptable student conduct, the staff member may evoke disciplinary measures. If necessary, the process moves from the individual College member to his/her respective supervisor for review. If the student's action continues or further action is necessary, the College staff member will continue to pursue the standard procedure of discussing the situation with her/her supervisor.

The student will be apprised of the unwanted behaviors and the steps necessary to correct the behaviors. At this point the appropriate supervisor can also recommend required counseling or follow one of several disciplinary action tracts, including but not limited to, verbal reprimand, restitution for damages, restitution of privileges, suspension or dismissal.

If the student disagrees with the course of action set forth, the student may then ask to see a manager or department heard or divisional chairperson, whichever is appropriate in the hierarchial structure. After review and recommendation at that level the student, if unsatisfied, can see the appropriate Director or Dean of the area of the College such as the Dean of Instructional Affairs or the Director of Student Services.

1. All cases or appeals of student misconduct and/or lack of academic integrity must be referred to one of the Administrators.

2. The administrator may evoke temporary suspension of the student of not more than five school days. If there is still not resolution from a director or Dean's level, due process involves requesting a review by the Student Status Committee. All cases or appeals meriting suspension or disciplinary dismissal must be referred to the Student Status Committee.

3. Students recommended for dismissal will be notified by their advisors in writing. Students will be given an opportunity to appeal the decision of the Student Status Committee if they so choose. Each region of the College has a Committee on Student Status, composed of at least two instructors, two students designated by the Student Senate, and two administrative persons.

4. The Student Status Committee deals with all cases relating to disciplinary actions or the academic status of students. Each regional institute has a Student Status Committee that makes recommendations to the Vice President/Dean.

a. The Student Status Committee will be composed of at least six members, including two full-time instructional staff members and two administrative staff persons appointed by the Vice President/Dean of the region. The additional two members will be students designated by the Student Senate. The Committee's review and subsequent disposition of a formal complaint will begin no later than thirty (30) days after receipt of the written complaint. Staff legal counsel, as needed, will be available to the Committee.

b. The Student Status Committee will assure the due process. A written statement will be presented to the student by the chairman of the Student Status Committee. The student will be invited to speak on his/her own behalf.

c. The chairperson of the Student Status Committee will notify the student and necessary staff in

advance of the meeting of the Student Status Committee (and the written grievance) within one week by mail (preferably registered).

d. The Student Status Committee will issue a recommendation to the Vice President/Dean who will make a final decision in the grievance process.

e. All parties involved will be informed in writing of the decision of the Student Status Committee and of the subsequent recommendations to the Vice President/Dean, whose decision is final.

f. If the student disagrees with the Student Status Committee recommendation, he/she may file a complaint with the regional Vice President/Dean within 72 hours after notification of the Student Status Committee's decision.

g. Exceptions to these rules may be made in extenuating circumstances at the discretion of the Vice President/Dean or his designee upon request by the party involved.

h. Copies of the above process are available to all students at the Learning Resource Center.

Student Grievances

Students may bring legitimate grievances to the attention of their instructors or other advisors. Time will be provided for grievance conferences within two weeks of the complaint. The purpose of the conference is to discuss the problem and to find, if possible, a mutually satisfactory resolution.

If the grievance concerns an instructor or an advisor, the student may request a conference with a department head, chairperson, the Director of Student Services, or the Dean of Instructional Affairs, as deemed appropriate. The conference will be held within two weeks of notice of the complaint.

The student who determines that the grievance has not been adequately addressed by these methods may continue the process by requesting a hearing by the Student Status Committee.

a. The Student Status Committee will be composed of at least six members, including two full-time instructional staff members and two administrative staff persons appointed by the Vice President/Dean of the region. The additional two members will be students designated by the Student Senate. The Committee's review and subsequent disposition of a formal complaint will begin no later than thirty (30) days after receipt of the written complaint. Staff legal counsel, as needed, will be available to the Committee.

b. The Student Status Committee will assure the due process. A written statement will be presented to the student by the chairman of the Student Status Committee. The student will be invited to speak on his/her own behalf.

c. The chairperson of the Student Status Committee will notify the student and necessary staff in advance of the meeting of the Student Status Committee

(and the written grievance) within one week by mail (preferably registered).

d. The Student Status Committee will issue a recommendation to the Vice President/Dean who will make a final decision in the grievance process.

e. All parties involved will be informed in writing of the decision of the Student Status Committee and of the subsequent recommendations to the Vice President/Dean, whose decision is final.

f. If the student disagrees with the Student Status Committee recommendation, he/she may file a complaint with the regional Vice President/Dean within 72 hours after notification of the Student Status Committee's decision.

g. Exceptions to these rules may be made in extenuating circumstances at the discretion of the Vice President/Dean or his designee upon request by the party involved.

h. Copies of the above process are available to all students at the Learning Resource Center.

Instructional Support Services Division

Division Office, North Meridian Center, Room 230

It is the mission of the Instructional Support Services Division, through a strong General Education Program, to stimulate the full intellectual, emotional, and social development of each student. The knowledge, skills, and attitudes gained in general education courses also undergird, broaden, and augment the college's technical curriculum. Recognizing the essential value of the general education curriculum, all associate degree programs require approximately 25% of degree credits in general education courses. The division also provides instruction in a comprehensive skills advancement program, known as ACCESS, which develops basic skills, attitudes and learning processes in order that students may enter and be successful in college programs. Additionally, the division provides an integrated system of academic and counseling support services as well as a Learning Resource Center with library and audio-visual services.

General Education:

Based on the belief that an associate degree should prepare students not only to enter the work force but also to become full participants in the complex, rapidly evolving multiple environments of American society, the General Education Program provides instruction in mathematics, physical science, communication, and social science, as well as a learning support system of counseling and tutoring, and additional support services through the Library/Learning Resource Center.

Mathematics and Science

Mathematics is an essential skill in meeting the ever-changing needs of our increasingly complex society. Its study develops logical reasoning and methods of analysis and problem-solving. The application of these skills is required of all productive citizens.

The study of *science* leads to an understanding of the basic principles as well as the physical and life processes in our natural world. Each individual should be aware of the interaction between components of our world and the adaptations made to accommodate these interactions.

The mathematics and sciences program provides program level mathematics and science courses, including Applied Mathematics, Technical Mathematics, Business Mathematics, Mathematics of Finance, Geometry, Trigonometry, Technical Calculus, Statistics, Physical Science, Physics, Chemistry and Biology.

Communications and Social Science

Recognizing that language is the foundation for all learning, the *communications* program encourages the use of language first as a creative tool to develop and organize an understanding of self and others. Using this understanding as a fulcrum, the clear, concise expression of ideas in speaking and writing becomes a powerful force in the interaction between people and cultures and ultimately in shaping a common future. Individuals develop proficiency in process-oriented composition, oral presentation, and business writing.

The study of *social science* focuses first on an examination of the student's own perception, motivation and striving for fulfillment. From that vantage point, further study explores the commonality and diversity of human experience in a pluralistic society. Students learn to understand and apply the principles of human behavior in social and professional relationships by focusing on individual and group processes.

Courses are offered in written communications, oral communications, business communications, technical report writing as well as courses in human relations, applied psychology, and sociology.

Library/Learning Resource Center

The Library/Learning Resource Center is a source of reference materials, leisure reading materials, materials related to all program areas of the College, career exploration materials, general magazines and newspapers, audio-visual materials and equipment, inter-library book loans, text books on reserve, reference service, library use assistance, and pay photocopying. There are two locations: Hours at East Washington Center and North Meridian Center are Monday through Thursday, 8:00 a.m. to 9:00 p.m. and Friday, 8:00 a.m. to 4:00 p.m. The North Meridian Center is also open 9:00 a.m. to 4:00 p.m. on Saturday.

Skills Advancement — Access Program:

Developing basic skills, attitudes and learning processes in order that students may enter and be successful in college programs, the ACCESS program is a comprehensive system of services including initial assessment of skills, specialized counseling services, ongoing course placement and classroom and lab instruction in basic mathematics, language, and social science. Additional learning assistance is provided through small-group and one-on-one tutoring and computer-assisted instruction. The ACCESS program also provides comprehensive services for special needs students and non-native speakers of English.

Instruction

Introductory mathematics courses, Basic Mathematics Skills, Mathematics Skills, Intermediate Mathematics Skills, Pre-Technology Mathematics I and II, are usually offered twice a week for two hours in the morning, afternoon and evening. Some once-a-week, four-hour sessions are also available.

Introductory communications courses provide classroom instruction augmented by individual tutorial, laboratory and computer-assisted instruction which affords the students a variety of opportunities for developing expressive and receptive communication skills.

The *Learning Development* program accepts students who, as a result of orientation testing, show a low profile in all academic areas. After an intensive, two-quarter program of instruction in reading, speech, critical thinking, mathematics and writing, the progress of these probationary students is assessed. Those who show the potential for success in college-level programs are recommended for completion of their developmental requirements.

English as a Second Language offers highly flexible morning and evening programs for non-native speakers of English, with individualized and group learning. Included are listening, speaking, reading, writing, grammar, and study skills, along with a number of the College's occupational/technical courses. Counseling and other services are also available for foreign students and resident immigrants.

Academic Support Services

Expert one-on-one tutoring for any course offered by ACCESS or ISSD is available in the *Tutoring Lab* in room 258 at the North Meridian Center. The hours are Monday through Thursday 8:00 a.m. to 8:30 p.m. and Friday 8:00 a.m. to 3:00 p.m. Appointments are optional.

The *Computer-Assisted Instruction (CAI) Lab* offers two microcomputer labs, one at North Meridian Street and one at East Washington Street, which help students learn concepts and provide students with adequate drill and practice sessions in such areas as the following: communication skills, mathematics and science skills, English as a second language and technical vocabulary for the deaf.

Special Services

Testing for course placement and admission to Ivy Tech programs is provided weekly. Included in this session are assessments of reading, writing and mathematics ability. Students who need to complete GED certification or who wish to receive credit by testing out of a course should contact the Testing Center for procedures.

Counseling Services through the ACCESS program include academic counseling, career testing and counseling, financial aid counseling and personal development counseling. These services are available to students who need supplemental support in order to succeed in their vocational and technical programs.

The Special Needs Program at Ivy Tech serves those students with physical disabilities and learning disabilities that may emerge as barriers to their acquiring job skills. Academic support and counseling services are provided specifically for students with special needs to enhance their independence and career preparation.

Division of Applied Science and Technologies

The Division of Applied Science and Technologies provides broad, practical education for those seeking employment and advancement in trade and technical occupations. The programs emphasize the ability to think and plan in the job setting. Initial laboratory experiences develop skills in the use of modern industrial equipment and measuring instruments. Later classroom and laboratory work provide training in industrial applications of theory, analysis, design and construction techniques. Each program provides opportunities for the student to advance from basic skills to proficiency on a high technological level.

Program advisory committees, composed of experts in each area of industry, serve the important function of keeping the content of the program current with changes in technology. Ivy Tech's programs and courses are designed to meet the needs of business and industry. The practical value of the course work is substantiated by its use in the training programs of many local industries.

Applied Fire Science Technology

Every year, fire destroys thousands of lives and property worth millions of dollars. Professional and volunteer firefighters and fire prevention technicians help protect the public from this danger.

Demands for personnel in this field are expected to increase steadily. As new fire departments are formed and others enlarge, employment should rise. Employment opportunities may be found with local fire departments, industrial plants, or fire underwriter's groups. All new personnel in this field must successfully pass certain written and physical examinations.

The Applied Fire Science program emphasizes skills in the acquisition of technical and general training, and the development of mature judgment necessary in firefighting as well as administration. The College offers a variety of courses and it is possible that only one course will meet a student's educational objective. In other cases the student may wish to pursue the Associate in Applied Science degree, which normally requires two years of study for the full-time student.

Applied Fire Science Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	5313	Introduction to Fire Technology	3	
Quarter	5314	Fire Apparatus 1	3	
	8203	Technical Mathematics 1	4	
	8401	Human Relations	4	
		TOTAL		14
Second	5323	Fire Apparatus 2	3	
Quarter	5324	Fire Department Hydraulics 1	3	
	5322	Electricity	3	
	8402	Applied Behavioral Psychology	4	
	8110	Communications	4	
		TOTAL		17
Third	5332	Fire Fighting Strategy and Tactics 1	3	
Quarter	5333	Fire Alarm and Protection Equipment	3	
	5325	Fire Department Hydraulics 2	2	
	3250	Emergency Medical Technician 1	4	
	8114	Technical Reporting	3	
		TOTAL		15
Fourth	5343	Rescue Practices and Procedures	3	
Quarter	5342	Hazardous Materials 1	3	
	5334	Fire Fighting Strategy and Tactics 2	2	
	3251	Emergency Medical Technician 2	4	
	8307	General Chemistry	3	
		TOTAL		15
Fifth	0913	Techniques of Supervision	3	
Quarter	5350	Applied Chemistry	2	
	5352	Hazardous Materials 2	3	
	5353	Fire Investigations	4	
	5351	Industrial Safety and Fire Control	3	
		TOTAL		15
Sixth	5360	Fire Service Inspection	4	
Quarter	5362	Fire Department Specifications	4	
	5363	Fire Prevention	4	
	5364	Legal Problems in Fire Service	4	
		TOTAL		16
Total Associate in Applied Science Degree Credits				92

Applied Fire Science Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	5313	Introduction to Fire Technology	3	
Quarter	5314	Fire Apparatus 1	3	
	8203	Technical Matehmatics 1	4	
	8401	Human Relations	4	
		TOTAL		14
Second	5323	Fire Apparatus 2	3	
Quarter	5324	Fire Department Hydraulics 1	3	
	8402	Applied Behavioral Psychology	4	
	8110	Communications	4	
	8307	General Chemistry	3	
		TOTAL		17
Third	5333	Fire Alarm and Protection Equipment	3	
Quarter	5325	Fire Department Hydraulics 2	2	
	5350	Applied Chemistry	2	
	5362	Fire Department Specifications	4	
	5364	Legal Problems in Fire Science	4	
		TOTAL		15
Total Technical Certificate Credits				46

Architectural Drafting / CAD Technology

Architectural Drafting is a career encompassing many of the planning tasks necessary to communicate the architect's designs in graphic form to the builder/contractor.

Computer Aided Drafting (CAD) courses are offered as an integral part of both Drafting Programs. Students are provided with the opportunity to train on up-to-date CAD equipment early in their curriculum.

Ivy Tech offers a variety of courses to make it possible for the student to meet his or her individual educational objectives. For some this may be accomplished by completing just one or two courses. Other students will want to pursue the College's Associate in Applied Science degree in Architectural Drafting. This program, will normally take a full-time student approximately two years to complete and will prepare him/her for a variety of career opportunities.

Entry level opportunities include detailing on board or CAD, knowledge of building codes, working with contract documents, estimating, and field observations. A student will probably be employed by architects, structural and mechanical-electrical systems engineers, contractors, sub-contractors, and building equipment and materials suppliers.

Architectural Drafting Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	7581	Drafting Fundamentals	6	
Quarter	9472	Computer Programming for Technicians	3	
	8203	Technical Mathematics 1	4	
	8401	Human Relations	4	
		TOTAL		17
Second	7520	Descriptive Geometry	3	
Quarter	7522	Production Drawing	3	
	5422	Residential Construction Materials	3	
	5456	CAD Fundamentals	3	
	8208	Geometry	3	
		TOTAL		15
Third	5430	Light Construction Presentation	3	
Quarter	5457	3 Dimensional CAD	3	
	7558	Sheet Metal Drafting	3	
	7543	Technical Illustration	3	
	8110	Communications	4	
		TOTAL		16
Fourth	5431	Light Construction Layout	3	
Quarter	5433	Light Construction Detail	3	
	5475	Topographical Map Drafting	3	
	5454	Interactive CAD	3	
	8209	Trigonometry	3	
		TOTAL		15
Fifth	5432	Mechanical and Electrical Equipment	3	
Quarter	5440	Medium Construction Presentation	3	
	5441	Medium Construction Layout	3	
	5452	Estimating	3	
	8302	Mechanics	3	
		TOTAL		15
Sixth	5442	Medium Construction Detail	3	
Quarter	5450	Heavy Construction Presentation	3	
	5471	Surveying Theory	3	
	5455	Architectural CAD	3	
	7552	Strength of Materials	3	
		TOTAL		15
Seventh	5451	Heavy Construction Layout	3	
Quarter	5453	Heavy Construction Detail	3	
	5497	Computer-Aided Architectural Detail	3	
	7578	Piping Fundamentals	3	
		TOTAL		12
Total Associate in Applied Science Degree Credits				105

Automated Manufacturing/Robotics Technology

The program prepares technicians to design, install, calibrate, program, operate, test, analyze, troubleshoot, service, and repair advanced manufacturing, assembly, and materials-handling systems and data computer networks. A multi-disciplinary technological program which utilizes mechanical, electrical, thermal, fluids, and/or technologies (1) to shape, form and process raw materials into finished products. (2) to assemble parts into finished products using sensing, vision, and robotic techniques, (3) in automated modern material handling techniques including conveyors, manless parts vehicles and storage systems, and (4) in computer data communications networks such as machine controllers, robot controllers, cell computers and computers adapted for inventory control and manufacturing. Coursework includes microprocessor fundamentals, digital principles, computer programming, sensor and system interfacing, robotics, hydraulics and pneumatics, CAD/CAM fundamentals, automated manufacturing fundamentals and technical mathematics. The program leads to the Associate in Applied Science degree and normally requires approximately two years to complete.

Automated Manufacturing/ Robotics Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	6471	D.C. Fundamentals	6	
Quarter	8203	Technical Math 1	4	
	8110	Communications	4	
	9472	Computer Programming for		
		Technicians	3	
				17
Second	6905	Robotics Principles 1	3	
Quarter	6919	Manufacturing Systems Control	3	
	6470	A.C. Fundamentals	6	
	8209	Trigonometry	3	
				15
Third	6907	Robotics Principles 2	3	
Quarter	6447	Special Semiconductors	3	
	6901	Manufacturing Processes	3	
	6434	Active Devices	3	
	8204	Technical Math 2	4	
				16
Fourth	6913	Automated Manufacturing		
Quarter		Systems 1	3	
	6903	Sensor and System Interfacing	3	
	6562	Digital Principles 1	3	
	6563	Digital Principles 2	3	
	8302	Physics 1 (Mechanics)	3	
				15
Fifth	6915	Automated Manufacturing		
Quarter		Systems 2	3	
	7341	Hydraulic and Pneumatic		
		Principles	3	
	6577	Digital Principles 3	3	
	6578	Digital Applications	3	
	8303	Physics 2 (Heat, Light & Sound)	3	
				15
Sixth	6923	Applied Mechanisms	3	
Quarter	6909	CAD/CAM Fundamentals	3	
	6520	Microprocessors 1	3	
	7342	Hydraulic and Pneumatic Systems	3	
	8114	Technical Report Writing	3	
				15
Seventh	6911	Work Cell Design	3	
Quarter	6917	Advanced Robotic Systems	3	
	6921	Failure Analysis Techniques	3	
	8401	Human Relations	4	
				13
Total Credit Hours				106

Automotive Body Repair Technology

Automotive Body Repair Technology, an exciting high-tech and service industry, is rising in importance. The increase in the demand for highly qualified technicians has created new courses of study in higher education.

Since Ivy Tech focuses on auto body repair technology, our graduates are capable of using the most up-to-date measuring, pulling and painting equipment. Individuals are also trained in communication skills, technical math and language, as they relate to industrial applications.

The automotive body repair program provides a one-year Technical Certificate. In-depth study of unibody repair, collision damage repair, suspension and alignment, chassis and auto paint refinishing is available. Our program combines hands-on training and classroom lectures, making it one of the most comprehensive programs of its kind.

Automotive Body Repair Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	5601	Basic Body Repair 1	2	
Quarter	5602	Basic Body Repair 2	2	
	5609	Basic Body Repair Practicum 1	1	
	5615	Basic Body Repair Practicum 2	1	
	5626	Automotive Sheet Metal Alignment	2	
	5642	Welding Practice/Auto Body 1	3	
	8110	Communications	4	
		TOTAL		15
Second	5603	Basic Body Repair 3	2	
Quarter	5604	Basic Body Repair 4	2	
	5617	Automotive Front End Alignment	2	
	5624	Body Welding 1	2	
	5625	Automotive Paint Shop Practice 1	2	
	5639	Fiberglass/Plastic Repair	2	
	5643	Welding Practice/Auto Body 2	3	
		TOTAL		15
Third	5611	Collision Damage Repair 1	2	
Quarter	5612	Collision Damage Repair 2	2	
	5613	Collision Damage Repair Practicum 1	1	
	5614	Collision Damage Repair Practicum 2	1	
	5620	Frame and Chassis Repair 1	2	
	5621	Frame and Chassis Repair 2	2	
	5622	Frame and Chassis Repair 3	2	
	8201	Applied Math 1	4	
		TOTAL		16
Fourth	5616	Auto Chassis/Accessory Circuits	3	
Quarter	5630	Collision Damage Appraising	2	
	5632	Auto Paint Shop Practice 2	2	
	5636	Auto Paint Refinishing	2	
	5638	Glass Installation	2	
	8401	Human Relations	4	
				15
Total Technical Certificate Credits				61

Automotive Service Technology

Automotive Service Technicians perform preventive maintenance, diagnose break-downs, and perform repairs on automobiles and other motor vehicles.

Entry level positions may be found in automobile dealerships and repair shops, service stations, motor parts, taxi-cab and leasing companies or by self-employment.

Ivy Tech's Automotive Service program provides students with instruction in the most current techniques and facets of repair, maintenance, testing, and supervision, utilizing automotive laboratories equipped with the latest service and testing equipment available. Students may fulfill their educational objectives by completing just a course or two or by completing the requirements for the College's Associate in Applied Science degree in Automotive Service. This program, which normally takes the full-time student approximately two years to complete, will prepare the student for a wide variety of career opportunities.

Automotive Service Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	5813	Automotive Braking Systems	3	
Quarter	5866	Occupational Health and Safety	4	
	8110	Communications	4	
	8203	Technical Mathematics 1	4	
	8304	Physics 1	3	
		TOTAL		18
Second	5851	Automotive Electronic Systems	3	
Quarter	5835	Manual Transmission and Transaxle	4	
	8204	Technical Mathematics 2	4	
	9472	Computer Programming for Technicians	3	
	8305	Physics 2	3	
		TOTAL		17
Third	5822	Engine Tool and Equipment	3	
Quarter	5828	Electronic Ignition Systems	3	
	5825	Electronic Fuel and Emission Control Systems	3	
	5814	Front End Systems	3	
	7310	General Print Reading	4	
		TOTAL		16
Fourth	5832	Start and Charge Systems	3	
Quarter	5891	Computerized Engine Controls	3	
	5834	Engine Overhaul	5	
	5854	Automatic Transmission Principles	3	
	7341	Hydraulic and Pneumatic Principles	3	
		TOTAL		17
Fifth	5865	Automotive Service Organization and Management	3	
Quarter	5847	Automotive Air Condition	3	
	5845	Advanced Engine Performance	4	
	5856	Automatic Transmission Overhaul	5	
		TOTAL		15
Sixth	5862	Comprehensive Automotive Lab	4	
Quarter	8113	Oral Communications	4	
	8401	Human Relations	4	
		TOTAL		12
Total Associate in Applied Science Degree Credits				95

Automotive Service Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	5813	Automotive Braking Systems	3	
Quarter	5823	Basic Electricity	3	
	5866	Occupational Health and Safety	4	
	8110	Communications	4	
	8201	Applied Mathematics 1	4	
		TOTAL		18
Second	5827	Ignition Systems	3	
Quarter	5847	Automotive Air Condition	3	
	5835	Manual Transmission and Transaxle	4	
	5832	Start and Charge Systems	3	
	8202	Applied Mathematics 2	4	
		TOTAL		17
Third	5821	Engine Theory	3	
Quarter	5826	Fuel and Carburetor Systems	3	
	5814	Front End Systems	3	
	5854	Automatic Transmission Principles	3	
	8401	Human Relations	4	
		TOTAL		16
Total Technical Certificate Credits				51

Electronics Technology

Electronics is an occupation field in which skilled technicians construct, operate, and maintain sophisticated electronic equipment. Employment opportunities are increasing due to the expanding electronics applications in virtually every area of applied technology. Those opportunities include service and repair of business machines, communications equipment, medical instruments and equipment, automotive components, and so forth at utility companies, manufacturing plants and many others.

One or two of Ivy Tech's courses may meet a student's educational objective. Other students will meet their objectives by pursuing the College's Associate in Applied Science degree in Electronics. This program, which will normally take the full-time student approximately two years to complete, will give the student a foundation in all aspects of Electronics. In the seventh quarter the student may select a specialized minor depending on his/her interest in either Industrial, Computer Service, or Communication.

Electronics Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	6471	D.C. Fundamentals	6	
Quarter	8203	Technical Mathematics 1	4	
	6420	Intro to DP & Computers	3	
		TOTAL		13
Second	6470	A.C. Fundamentals	6	
Quarter	8209	Trigonometry	3	
	8110	Communications (English)	4	
	6413	Fabrication	3	
		TOTAL		16
Third	6434	Introduction to Active Devices	3	
Quarter	6435	Electronics Circuits 1	3	
	6455	Circuit Analysis	3	
	8204	Technical Mathematics 2	4	
	8302	Mechanics	3	
		TOTAL		16
Fourth	6447	Special Semi-conductors	3	
Quarter	6454	Electronics Circuits 2	3	
	6562	Digital Principles 1	3	
	6563	Digital Principles 2	3	
	6446	Integrated Circuits	3	
		TOTAL		15
Fifth	6577	Digital Principles 3	3	
Quarter	6578	Digital Application	3	
	6451	Communications Electronics 1	3	
	6452	Communications Electronics 2	3	
	6543	Basic Industrial Electronics	3	
		TOTAL		15
Sixth	6520	Microprocessors 1	3	
Quarter	6533	Microprocessors 2	3	
	8303	Heat, Light, & Sound	3	
	6538	Rotating Machine 1	3	
	6539	Rotating Machine 2	3	
		TOTAL		15
Seventh	xxxx	Minor Elective	3	
Quarter	xxxx	Minor Elective	3	
	6524	Troubleshooting Techniques	3	
	8401	Human Relations	4	
	6584	Telecommunication	3	
		TOTAL		16
Total Associate in Applied Science Degree Credits				106

*The minor elective is selected on the student's interest or availability of the classes.

Communication			
	6453	Communication Electronics 3	3
	6460	Microwave and Radar	3

Computer Service			
	6527	Peripherals 1	3
	6535	Peripherals 2	3

Industrial			
	6553	Industrial Electronics 1	3
	6554	Industrial Electronics 2	3

Heating, Air Conditioning and Refrigeration Technology

Trained heating, air conditioning, and refrigeration technicians will be prepared for work in sales, as insulation estimators, furnace installers, application repairmen, as well as technicians in heating, air conditioning, or refrigeration. Entry level positions may be found in office buildings, factories, restaurants, theaters, hospitals, governmental agencies, service firms or by self-employment.

The Heating, Air Conditioning and Refrigeration program at Ivy Tech is designed to provide students with the skills necessary for the first job or for upward mobility. It is possible that one or two of the College's wide variety of courses will meet a student's educational objectives. Other students will meet their objectives by pursuing the College's Associate in Applied Science degree in Heating, Air Conditioning and Refrigeration. This program will normally take the full-time student approximately two years to complete.

Heating, Air Conditioning and Refrigeration Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	7112	Heating Fundamentals	3	
Quarter	7113	Basic Electricity for Air Conditioning	3	
	7114	Basic Mechanics and Shop Techniques	3	
	7123	Air Conditioning and Refrigeration Fundamentals	3	
	8201	Applied Mathematics 1	4	
		TOTAL		16
Second	7124	Heating Service—Gas and Oil	3	
Quarter	7126	Air Conditioning and Refrigeration	3	
	7133	Cooling Service Electrical	3	
	7135	Electrical Circuits and Controls	3	
	7143	Blueprint Reading	3	
		TOTAL		15
Third	7125	Motors and Motor Control	3	
Quarter	7127	Heating Service Electrical and Hydronic	3	
	7134	Cooling Service Mechanical	3	
	7154	Duct Fabrication and Installtion	3	
	7137	Heat Loss/Gain Calculation	3	
		TOTAL		15
Fourth	7145	Heat Pump Service	3	
Quarter	7146	Cooling Service Advanced	3	
	8202	Applied Math 2	4	
	8110	Communications	4	
		TOTAL		14
Total Technical Certificate Credits				60

Heating, Air Conditioning and Refrigeration Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	7112	Heating Fundamentals	3	
Quarter	7113	Basic Electricity for Air Conditioning	3	
	7114	Basic Mechanics and Shop Techniques	3	
	7123	Air Conditioning and Refrigeration Fundamentals	3	
	8201	Applied Math 1	4	
		TOTAL		16
Second	7124	Heating Service—Gas and Oil	3	
Quarter	7126	Air Conditioning and Refrigeration	3	
	7133	Cooling Service Electrical	3	
	7135	Electrical Circuits and Controls	3	
	8202	Applied Math 2	4	
		TOTAL		16
Third	7125	Motors and Motor Control	3	
Quarter	7127	Heating Service Electrical and Hydronic	3	
	7134	Cooling Service Mechanical	3	
	7154	Duct Fabrication and Installation	3	
	8110	Communications	4	
		TOTAL		16
Fourth	7143	Blueprint Reading	3	
Quarter	7144	Commercial Refrigeration	3	
	7145	Heat Pump Service	3	
	7146	Cooling Service Advanced	3	
	8606	Introductory Welding	3	
		TOTAL		15
Fifth	7136	Psychrometry	3	
Quarter	7137	Heat Loss/Gain Calculations	3	
	7153	Commercial Refrigeration Advanced	3	
	7163	Air Distribution System Design	3	
	7147	Uniform Mechanical Code	2	
		TOTAL		14
Sixth	7155	Specifications and Estimating	3	
Quarter	7162	Specialized Environmental Systems	3	
	7165	Advanced Electrical Controls	3	
	7528	Drafting for Heating/Air Conditioning	3	
	7152	Air Balancing	2	
		TOTAL		14
Seventh	7174	Service Organization and Management	3	
Quarter	7175	Equipment Sales	3	
	7176	Applied Design	4	
	8401	Human Relations	4	
		TOTAL		14
Total Associate in Applied Science Degree Credits				105

Industrial Drafting / CAD Technology

The industrial drafting technician provides an essential link between engineering and the production departments.

Computer Aided Drafting (CAD) courses are offered as an integral part of both Drafting Programs. Students are provided with the opportunity to train on up-to-date CAD equipment early in their curriculum.

Ivy Tech's wide variety of courses make it possible for the student to meet his or her individual educational objectives. For some this may be accomplished by completing just one or two courses. Other students will want to pursue the College's Associate in Applied Science degree in Industrial Drafting. This program will normally take a full-time student approximately two years to complete, and will prepare him or her for a variety of career opportunities.

Industry and business is constantly searching for technicians with the training and ideas to help bring products and services to market. Our graduates are employed with large and small manufacturing companies, tooling and fabrication companies, as well as engineering firms. Jobs vary from entry level detailers (on board or CAD) to designers, to CAD systems managers.

Industrial Drafting Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	7581	Drafting Fundamentals	6	
Quarter	9472	Computer Programming for Technicians	3	
	8203	Technical Mathematics 1	4	
	8401	Human Relations	4	
		TOTAL		17
Second	7520	Descriptive Geometry	3	
Quarter	7522	Production Drawing	3	
	7521	Industrial Process and Systems	3	
	5456	CAD Fundamentals	3	
	8208	Geometry	3	
		TOTAL		15
Third	7543	Technical Illustration	3	
Quarter	5457	3 Dimensional CAD	3	
	7558	Sheet Metal Drafting	3	
	5430	Light Construction Presentation	3	
	8110	Communications	4	
		TOTAL		16
Fourth	7530	Product Drafting	3	
Quarter	7532	Tool Drafting	3	
	8209	Trigonometry	3	
	5454	Interactive CAD	3	
	7780	Basic Machine Tool	3	
		TOTAL		15
Fifth	7540	Product Design	3	
Quarter	7557	Jig and Fixture	3	
	8064	Metallurgy	3	
	8302	Mechanics	3	
	7762	Precision Measurement	3	
		TOTAL		15
Sixth	7541	Advanced Tool and Gauge	3	
Quarter	7575	N.C. and Data Processing	3	
	7531	Mechanisms and Machines	3	
	7552	Strength of Materials	3	
	5459	Computer-Aided Printed Circuit Board	3	
		TOTAL		15
Seventh	7578	Piping Fundamentals	3	
Quarter	7533	Die Design	3	
	7593	CAD/CAM	3	
	7341	Hydraulic and Pneumatic Principles	3	
		TOTAL		12

Total Associate in Applied Science Degree Credits   105

Industrial Drafting Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	7581	Drafting Fundamentals	6	
Quarter	9472	Computer Programming for Technicians	3	
	8203	Technical Mathematics 1	4	
	8401	Human Relations	4	
		TOTAL		17
Second	7520	Descriptive Geometry	3	
Quarter	7522	Production Drawing	3	
	7521	Industrial Process and Systems	3	
	5456	CAD Fundamentals	3	
	8208	Geometry	3	
		TOTAL		15
Third	7543	Technical Illustration	3	
Quarter	5457	3 Dimensional CAD	3	
	7558	Sheet Metal Drafting	3	
	5430	Light Construction Presentation	3	
	8110	Communications	4	
		TOTAL		16

Total Technical Certificate Credits   48

Industrial Lab Technology

As the use of industrial and scientific data becomes more complex, the need for trained industrial lab technicians increases. The demand for qualified, highly skilled technicians in research or development laboratories, manufacturing plants and computer centers has spawned new courses of study in higher education.

Ivy Tech's curriculum has recognized this demand and made the commitment to meet the present and projected needs of industry. As a new education area at Ivy Tech, the industrial lab technology program is shaped by input from engineers and scientists. Providing trained technicians, skilled in assuming the everyday tasks regularly completed by scientists and engineers, is Ivy Tech's goal to meet technological demands.

As an industrial lab technician, you will analyze and solve basic engineering problems, prepare written reports by organizing and summarizing data, conduct experiments and tests and work with a variety of other technicians in order to coordinate technical jobs.

To keep engineering and scientific laboratories running efficiently, the engineer needs a qualified technician knowledgeable in mathematics, statistics, chemistry, data processing, communications and psychology. You can be the link between the engineer and the manufacturing plant worker.

Our industrial lab technology program combines hands-on training in the use of scientific calculator, micro-computer and computer-aided design systems with classroom lecture, making it one of the most comprehensive programs of its kind.

Program flexibility helps train students in one of industry's emerging technologies and provides the opportunity for the completion of an Associate in Applied Science degree.

Industrial Laboratory Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	7013	Introduction to Technology	4	
Quarter	8110	Communications	4	
	8203	Technical Mathematics 1	4	
	8401	Human Relations	4	
		TOTAL		16
Second	7002	Industrial Laboratory Techniques	4	
Quarter	8209	Trigonometry	3	
	8304	Physics 1 (Mechanics)	3	
	8307	General Chemistry	3	
	9472	Computer Programming for Technicians	3	
		TOTAL		16
Third	0607	Productivity Software Applications	4	
Quarter	7004	Indus. Instruments and Techniques 1	4	
	8204	Technical Mathematics 2	4	
	8305	Physics 2 (Heat, Light, and Sound)	3	
		TOTAL		15
Fourth	7005	Indus. Instruments and Techniques 2	4	
Quarter	8206	Technical Calculus 1	4	
	8210	Statistics	3	
	8306	Physics 3 (Electricity & Magnetism)	4	
	8308	General Microbiology	3	
		TOTAL		18
Fifth	0901	Quality Control Concepts & Techniques 1	4	
Quarter	8113	Oral Communications	4	
	8114	Technical Reporting	3	
	6505	Instrument Electronics—Minor #1	3	
		TOTAL		14
Sixth	0913	Techniques of Supervision 1	3	
Quarter	7006	Environmental Monitoring	4	
	7012	Engineering Graphics—Minor #2	3	
	8064	Basic Metallurgy—Minor #3	3	
		TOTAL		13
Total Associate in Applied Science Degree Credits				92

Industrial Maintenance Technology

Industrial maintenance technicians spend much of their time performing preventative and general maintenance such as equipment inspection, general maintenance procedures, and record keeping for manufacturing industries in foods, primary metals, machinery, chemicals, fabricated metal products, transportation equipment, paper publishing and rubber. The wide range of courses provides instruction in installation and general maintenance in three major areas: machine tool, heating and air conditioning, and electrical wiring and equipment. Emphasis is also placed on industrial safety and health.

Some students may accomplish their career objectives by completing just one or two courses. Other students will want to pursue the College's Associate in Applied Science degree in Industrial Maintenance. This program, which will normally take the full-time student approximately two years to complete, will prepare the student for a wide range of career opportunities.

Industrial Maintenance Technology
Equipment Minor
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	8203	Tech Math	4	
Quarter	7341	Basic Hydraulics/Pneumatic		
		Principles	3	
	7310	General Print Reading	3	
	7324	Industrial Safety	2	
	8110	Communications	4	
		TOTAL		16
Second	8209	Trigonometry	3	
Quarter	7320	AC/DC Fundamentals	3	
	7342	Hydraulic/Pneumatic		
		System Repair	3	
	7322	Construction Basics	3	
	7711	Machining Fundamentals	3	
		TOTAL		15
Third	8304	Physics 1	3	
Quarter	8401	Human Relations	4	
	7331	Electrical Circuits	3	
	7510	Basic Drafting	3	
	9472	Computer Programming for Tech	3	
		TOTAL		16
Fourth	7321	Wiring for Industry	3	
Quarter	8066	Introductory Welding	3	
	7323	Heating & A/C Basics	3	
	8305	Physics 2	3	
	7348	Millwright 1	3	
		TOTAL		15
Fifth	8113	Oral Communications	4	
Quarter	6905	Robotics Principles 1	3	
	7339	Machine Diagnosis &		
		Repair Elect.	3	
	7340	Machine Maintenance	3	
	7343	Preventive Maintenance	3	
		TOTAL		16
Sixth	7381	Machine Installation	3	
Quarter	7125	Motors & Motors Control	3	
	7352	Troubleshooting Skills	3	
	7367	Programmable Controllers	3	
	7375	Utilities Distribution	3	
	6907	Robotics Principles 2	3	
		TOTAL		18
Total Associate in Applied Science Degree Credits				96

Industrial Maintenance Technology
Facilities Minor
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	8203	Tech Math	4	
Quarter	7341	Basic Hydraulics/Pneumatic		
		Principles	3	
	7310	General Print Reading	3	
	7324	Industrial Safety	2	
	8110	Communications	4	
		TOTAL		16
Second	8209	Trigonometry	3	
Quarter	7320	AC/DC Fundamentals	3	
	7342	Hydraulic/Pneumatic		
		System Repair	3	
	7322	Construction Basics	3	
	7711	Machining Fundamentals	3	
		TOTAL		15
Third	8304	Physics 1	3	
Quarter	8401	Human Relations	4	
	7331	Electrical Circuits	3	
	7510	Basic Drafting	3	
	8113	Oral Communications	4	
		TOTAL		17
Fourth	7321	Wiring for Industry	3	
Quarter	8066	Introductory Welding	3	
	7323	Heating & A/C Basics	3	
	8305	Physics 2	3	
	9472	Computer Programming for Tech	3	
	9413	Building Trades & Blue Print		
		Reading 1	3	
		TOTAL		18
Fifth	6905	Robotics Principles 1	3	
Quarter	6024	Plumbing Fundamentals	3	
	6036	Masonry & Concrete		
		Fundamentals	3	
	7125	Motors & Motors Control	3	
	6062	Floor & Wall Covering	3	
		TOTAL		15
Sixth	7381	Machine Installation	3	
Quarter	7367	Programmable Controllers	3	
	7340	Machine Maintenance	3	
	6012	Roof Construction	3	
	6026	Advanced Skills in Masonry	3	
		TOTAL		15
Total Associate in Applied Science Degree Credits				96

Machine Tool Technology

Machine tool technicians are builders, the kind of men and women who like to make things with their hands and figure things out with their minds.

Job opportunities may be found in factories that produce fabricated metal products, transportation equipment, and machinery in large quantities. Demand for these skilled workers is expected to increase as metal working and plastic industries expand.

The machine tool program at Ivy Tech is designed to provide students with the skills necessary for that first job or for upward mobility. Some students will find that one or two courses in an area such as specialized machining, setup and operation, machine tool processes, blueprint reading, numerical control, or grinding will meet their individual educational objectives. Other students will want to pursue the College's Technical Certificate. This program normally takes the full-time student approximately one year to complete. A five-level Computerized Numerical Control Machining Certification is available for those interested in modern machining skills.

Machine Tool Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	7710	Machine Tool Introduction	3	
Quarter	7731	Basic Print Reading	3	
	7758	Numerical Control and Automated Processing 1	3	
	8203	Technical Mathematics 1	4	
		TOTAL		13
Second	7711	Machine Fundamentals 1	3	
Quarter	7759	Numerical Control and Automated Processing 2	3	
	9441	Shop Mathematics 4	3	
	9472	Computer Programming for Technicians	3	
		TOTAL		12
Third	7712	Machine Fundamentals 2	3	
Quarter	7734	Advanced Blueprint Reading	3	
	7760	Numerical Control and Automated Processing 3	3	
	7725	Interactive Numerical Control Machining	3	
		TOTAL		12
Fourth	7733	Advanced Machine Tool Setup & Operations	3	
Quarter	7740	Specialized Machine Theory	3	
	7769	Numerical Control and Automated Processing 4	3	
	7744	Machinery's Handbook	3	
		TOTAL		12
Total Technical Certificate Credits				49

Pollution Treatment Technology

Ivy Tech's pollution treatment program provides training in wastewater treatment, air pollution control, public water supply, and hazardous wastes for municipal and industrial facilities. State and Federal environmental regulations are covered in detail to help the professional stay current. Courses are offered in plant math, equipment and maintenance, and applied chemistry.

Many courses in Pollution Treatment Technology will involve tours to various plants and water treatment sites to give you a glimpse of the real work world. Water treatment facilities, wastewater plants, the air pollution control offices for Marion County, and Indianapolis Power and Light Company are a few of the locations visited.

Of special interest to those already working in the field of wastewater treatment are the Plant Operation courses and the Applied Chemistry I course. The operations courses can help the individual prepare for the State Board of Health Certification Examination. The course in Applied Chemistry trains the laboratory technician in hands-on performance or required monitoring analysis in accordance with Environmental Protection Agency mandated procedures.

With an Associate in Applied Science degree, you may qualify as a laboratory technician, facilities operator, wastewater supervisor, equipment maintenance technician, or work in solids handling or collection systems.

Pollution Treatment Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	7913	Introduction to Environment		
Quarter		Control	4	
	8203	Technical Mathematics 1	4	
	8110	Communications	4	
		TOTAL		12
Second	8113	Oral Communications	4	
Quarter	8204	Technical Mathematics 2	4	
	7943	Water Supply and Treatment	4	
	7916	Environmental Seminar	1	
		TOTAL		13
Third	7954	Plant Operations 1	4	
Quarter	7955	Management and Supervisory		
		Procedures	3	
	7951	Reporting and Purchasing	2	
	8307	General Chemistry	3	
	XXXX	Elective	4	
		TOTAL		16
Fourth	7964	Plant Mathematics 1	4	
Quarter	7961	Plant Operations 2	3	
	7975	Basic Laboratory Skills	2	
	7960	Air Pollution Control 1	4	
		TOTAL		13
Fifth	7966	Hazardous Materials	2	
Quarter	7973	NPDES Workshop	2	
	7963	Plant Operations 3	3	
	8114	Technical Reporting	3	
	7915	Applied Chemistry 1	3	
		TOTAL		13
Sixth	7972	Environmental Administration	4	
Quarter	7934	Basic Hydraulics	4	
	7970	Air Pollution Control 2	3	
	7958	Plant Equipment Maintenance 2	3	
		TOTAL		14
Seventh	7942	Applied Microbiology	3	
Quarter	7956	Applied Research 2	3	
	9472	Computer Programming for		
		Technicians	3	
	XXXX	Elective	6	
		TOTAL		15
Total Associate in Applied Science Degree Credits				96

Welding Technology

Job opportunities are expected to be quite good for welders in the future. Opportunities for welders exist with power plants, pipelines, fabrication and building trades, welding service shops, utility companies and manufacturing firms. The successful Ivy Tech student will be interested in positions such as welder, flame cutter, inspector, braiser, spot welder, and fabricator.

The welding program at Ivy Tech is designed to provide students with the skills necessary for that first job or for upward mobility. Some students will find that one or two courses in an area will meet their individual educational objectives. Other students will want to pursue the College's Technical Certificate in Welding. This program normally takes the full-time student approximately one year to complete.

Welding Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	8013	Blueprint Interpretation	3	
Quarter	8063	Electrical Fundamentals for Welding	3	
	8090	Shielded Metal Arc Welding 1	5	
	8099	Oxy-acetylene Gas Welding/Cutting	5	
		TOTAL		16
Second	8024	Welding Blueprint Interpretation	3	
Quarter	8095	Shielded Metal Arc Welding 2	5	
	8097	Gas Tungsten Arc Welding	5	
	8201	Applied Mathematics 1	4	
		TOTAL		17
Third	8202	Applied Mathematics 2	4	
Quarter	8401	Human Relations	4	
	8075	Welding Fabrications 1	5	
	8096	Gas Metal Arc Welding	5	
		TOTAL		18
Fourth	8061	Pipe Welding 1	5	
Quarter	8064	Basic Metallurgy	3	
	8110	Communications	4	
	8098	Welding Certification	4	
		TOTAL		16
Total Technical Certificate Credits				67

Division of Business, Office and Information Systems Technologies

Career opportunities in business are expanding rapidly. Employment statistics indicate that the best jobs in business will be filled by persons equipped with the technical skills required in today's business world. In recognition of the impact of changing technology on business careers, Ivy Tech's Division of Business, Office and Information Systems Technologies offers programs designed to prepare the student for employment in one of many occupations relevant to Indiana businesses and industries.

Accounting Technology

All levels of business, industry and government rely on accountants to express, in financial terms, the results of their daily transactions.

Demand for accountants is particularly strong in banks, insurance companies, manufacturing firms, government offices and professional service organizations. Entry level positions in the accounting field include Budget Assistant, Cost Accounting Clerk, Bookkeeper, Accounting Technician, Auditing Technician, Supply Technician and many others.

Ivy Tech's Accounting Program provides instruction for initial employment or the up-grading of skills. Many students can meet their educational objectives by completing just a course or two and other students will want to develop their skills to the fullest by pursuing the College's Associate in Applied Science degree in Accounting. This program, which normally will take the full-time student approximately two years to complete, will prepare him or her for a wide range of employment opportunities.

Accounting Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	0110	Accounting 1	4	
Quarter	8110	Communications	4	
	8212	Business Math	4	
	0122	Business Law 1	3	
		TOTAL		15
Second	0120	Accounting 2	4	
Quarter	1236	Office Calculating Machines	3	
	8113	Oral Communications	4	
	8401	Human Relations	4	
		TOTAL		15
Third	0130	Accounting 3	4	
Quarter	0142	Job Cost Accounting	4	
	0143	Business Law 2	3	
	XXXX	Elective	4	
		TOTAL		15
Fourth	0140	Intermediate Accounting 1	4	
Quarter	0151	Process Cost Accounting	4	
	8213	Math of Finance	4	
	0610	Introduction to Microcomputers	3	
		TOTAL		15
Fifth	0150	Intermediate Accounting 2	4	
Quarter	0141	Individual Income Tax	4	
	0607	Productivity Software Applications	4	
	1112	Introduction to Business	4	
		TOTAL		16
Sixth	0160	Intermediate Accounting 3	4	
Quarter	0609	Introduction to Spreadsheets	4	
	8111	Business Communications	4	
		Elective	3	
		TOTAL		18

Total Associate in Applied Science Degree Credits — 94

Electives may be chosen from a wide variety of business courses.

Business and Management (BAM)

The business and management program is structured to adapt to diverse interests in four optional areas — Small Business Management, Marketing Management, Physical Distribution Management and Manufacturing Management.

Career path: Your choice of BAM option (Small Business Management, Marketing Management, Physical Distribution Management and Manufacturing Management), leads toward an Associate in Applied Science degree in Business and Management.

Full-time or part-time: If a full-time student, usually only 3 campus visits per week need be scheduled (three courses totaling 12 credits; more courses optional).

Day or evening: If day, most courses start at 9:00 a.m.; if evening, most courses start at 5:30 p.m. This choice also allows your schedule to be flexible during the quarter classes are offered, shifting day or evening.

Degree objective or courses-only: Many "courses-only" are offered off campus in the surrounding area and counties.

For those individuals who, at the outset, are uncertain of a career path, BAM provides for enrollment in basic courses, allowing time to defer firming of career choice. For those with a degree objective, BAM provides, in addition to choice of option, selection of elective courses, allowing for refinement of career preparation. For those wishing preparatory instruction, BAM draws on a full-time special-needs faculty for individualized concerns.

BAM offers the business operational and managerial skills needed for 1) small business — self-employment as entrepreneur or generalist administrator, such as office manager; 2) manufacturing — management trainee, first line supervisor, or advancement such as superintendent; 3) marketing — management trainee, buyer, salesman, retailer, agent, or advanced managerial functions; 4) physical distribution - traffic coordinator or PD/L supervisor.

Business and Management
Associate in Applied Science Degree

Option 03—Small Business Management
Optional 09—Industrial Management
Option 10—Physical Distribution Management
Option 11—Marketing Management

COURSE #	COURSE TITLE	OPTIONS	CREDITS
	Degree Requirements, All Options—BAM		
	(6 courses; 24 credits)		
1112	Introduction to Business		4
0320	Management Principles		4
0328	Laws Applied to Business		4
0112	Accounting/Non-Majors		4
0607	Productivity Software Applications		4
*0609	Introduction to Spread Sheets		4
*0610	Introduction to Microcomputers		3
	(May be substituted for either above)		
	Degree Requirements		
	(7 courses; 28 credits)		
1157	Entrepreneurship	03	4
0965	Bus. Management/Manufacturing	09 10	4
1161	Business Management/		
	Marketing	03 11	4
0321	Office Administration	03	4
0322	Personnel Administration	03 09	4
1148	Insurance	03	4
1002	Manufacturing and Logistics	09	4
0901	Quality Control Concepts	09 10	4
0904	Statistical Concepts and Techniques	09	4
1001	Distribution and Logistics	10 11	4
1003	Transportation Systems	10	4
1004	Warehousing	10	4
1135	Retailing	11	4
1137	Buying and Inventory Control	09 11	4
1147	Advertising	11	4
1151	Public Relations	03	4
1115	Sales Techniques	10 11	4
1006	Case Studies/Small Business	03	4
1006	Case Studies/Industrial	09	4
1006	Case Studies/Physical Distribution	10	4
1006	Case Studies/Marketing	11	4
	Degree Requirements, All Options—General		
	(5 courses; 20 credits)		
8110	Communications		4
8111	Business Communications		4
8212	Business Mathematics		4
8213	Mathematics of Finance		4
8401	Human Relations		4

Electives, All Options—Minimum 18 credits. (May be drawn from a broad, well defined selection, including but not limited to requirements of other options.)

Total AAS Degree: 90 Credits

Computer Information Systems Technology

We are living and working in the age of computers. Businesses, government agencies, and other organizations use computers extensively through a wide range of applications to provide routine service as well as solve the problems of business.

The demand for computer specialists is particularly high in areas such as banking, insurance, hospitals, manufacturing, distributing firms, and government. In addition to entry level positions of computer programmer, students may find jobs as computer operators.

Ivy Tech's curriculum provides an integrated study of theory and practice of data processing for business, industry and other institutional use. At Ivy Tech College it is possible that only one or two of these courses will meet a student's educational objectives. Other students will want to pursue the College's Associate in Applied Science degree in Computer Information Systems Technology. This program will normally take the full-time student two years to complete and will prepare the graduate for the widest range of employment opportunities.

Computer Information Systems Technology
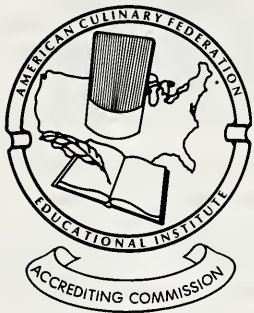### Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	0510	Fundamentals of Data Processing	5	
Quarter	1112	Introduction to Business	4	
	0110	Accounting Principles 1	4	
	81xx	English Comp. 1	4	
		TOTAL		17
Second	82xx	College Algebra	4	
Quarter	0120	Accounting Principles 2	4	
	0522	Logic & Documentation	4	
	05xx	(Minor)	4	
		TOTAL		16
Third	0520	Cobol Prog. Fund.	5	
Quarter	0531	Operating Systems	4	
	82xx	Computer Math & Logic	4	
	0610	Intro. To Microcomputers	4	
		TOTAL		17
Fourth	0530	Advanced Cobol Programming	5	
Quarter	0560	Data Communications	4	
	81xx	Technical Reporting	4	
	05xx	(Minor)	4	
		TOTAL		17
Fifth	83xx	Physical Science	4	
Quarter	0540	Systems Analysis and Design	4	
	05xx	(Minor)	5	
	05xx	(Minor)	3	
		TOTAL		16
Sixth	05xx	System Development with		
Quarter		High Level Tools	4	
	8401	Interpersonal Communications	4	
	05xx	(Minor)	5	
		TOTAL		13
Total Associate in Applied Science Degree Credits				96

Culinary Arts Technology

The *Indiana Labor Market: Profile of Region 8* projects an increasing demand for cooks and food service workers in the greater Indianapolis area. Through Ivy Tech's comprehensive Culinary Arts program, you will become familiarized with the culinary styles of outstanding chefs and experienced instructors. Courses in food techniques and uses of many types of equipment culminate in the award of the Associate in Applied Science degree.

You will participate in food preparation with special attention given to personal hygiene, food handling techniques, sanitation, and safety regulations. The Culinary Arts program covers food, beverage, volume food service, menu planning, international food preparation, classical cuisine, baking and pastries, meat cutting and fish and seafood preparation. An internship arrangement is required of local food service businesses.

Ivy Tech's Culinary Arts program prepares you for entry-level jobs in the food service industry, ranging from counter service to sous chef. Many courses in the program develop managerial skills as well as technical skills. The program is affiliated with the Indiana Restaurant Association, American Hotel/Motel Association, American Culinary Federation and Chef's de Cuisine Association of Indiana.

Culinary Arts
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	3411	Introduction to Culinary Arts	2	
Quarter	3413	Introduction to Foods	2	
	3415	Introductory Baking	3	
	3416	Culinary Theory and Skills Development	3	
	8110	Communications	4	
	3423	Introductory Hot Food Preparation	3	
		TOTAL		17
Second	3417	Pantry and Breakfast Cookery	2	
Quarter	3419	Culinary Arts Externship 1	3	
	3421	Nutrition	3	
	3455	Menu Design	4	
	8401	Human Relations	4	
		TOTAL		16
Third	3425	Introduction to Table Service	2	
Quarter	3426	Purchasing, Storeroom Procedures and Stewarding	2	
	3427	Institutional Food Service Systems	2	
	3428	Intermediate Hot Food Preparation	2	
	3429	Culinary Arts Externship 2	3	
	8212	Business Mathematics	4	
		TOTAL		15
Fourth	3430	Meat Cutting, Kitchen	3	
Quarter	3439	Culinary Arts Externship 3	3	
	3467	Classical Pastries	3	
	0110	Accounting Principles 1	4	
	3470	Fish and Seafood Preparation	3	
		TOTAL		16
Fifth	3440	International Food Planning	3	
Quarter	3442	Buffet Catering	2	
	3459	Classical Cuisine and Banquet Organization	3	
	3471	Garde Manger	3	
	0913	Technical Supervision 1	3	
	0753	Motel/Motel Law	3	
		TOTAL		17
Sixth	3436	Advanced Baking/Classical Pastry	3	
Quarter	3461	A la Carte Food Preparation and Advanced Table Service	3	
	3462	Advanced Food Preparation and Banquet Service	3	
	0923	Technical Supervision 2	3	
	3437	First Aid/Sanitation	2	
		TOTAL		14
Total Associate in Applied Science Degree Credits				95

Distribution Management Technology

Distribution Management Technology is an essential aspect to the manufacturing and marketing of goods, representing "the second largest employer in the United States."

The five major components of the physical distribution system are material handling, warehousing, inventory control, order processing and customer service, and transportation (e.g. road, rail, water, air) carriers.

Career opportunities are found with shippers (e.g. producers, wholesalers), carriers (e.g. railroads), and receivers (e.g. major retailers). Entry level positions could include assisting a line supervisor of one of the major physical distribution and logistics areas or assisting in a staff capacity in the coordination of several of their business activities. Advancement opportunities could include management.

Distribution Management Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	1001	Distribution and Logistics	4	
Quarter	0575	Topics in Data Processing	4	
	8401	Human Relations	4	
	0571	Survey of Business Data Processing	3	
		TOTAL		15
Second	1002	Manufacturing and Logistics	4	
Quarter	8110	Communications	4	
	8212	Business Mathematics	4	
	0323	Business Principles and Organization	3	
		TOTAL		15
Third	1003	The Transportation Systems	4	
Quarter	0603	Micro/Minicomputer Operation Systems	4	
	0112	Accounting for Non-Majors	4	
	0166	Introduction to Management	3	
		TOTAL		15
Fourth	1004	Warehousing and Inventory Control	4	
Quarter	0607	Productivity Software Applications	4	
	0322	Personnel Administration	4	
	0122	Business Law 1	3	
		TOTAL		15
Fifth	1005	Order Processing and Customer Service	4	
Quarter	8111	Business Communications	4	
	8213	Mathematics of Finance	4	
	XXXX	Elective from Business Division	3	
		TOTAL		15
Sixth	1006	Case Studies in Distribution Management	4	
Quarter	1007	Import/Export & Domestic Marketing	4	
	0321	Office Administration	4	
	XXXX	Elective from Business Division	3	
		TOTAL		15
Total Associate in Applied Science Degree Credits				90

Hotel/Restaurant Management Technology

The hospitality industry is the third largest in the nation. In Indiana it ranks as the second largest.

Ivy Tech's curriculum, with guidance from the American Hotel and Motel Association, has recognized this trend and made the commitment to meet the present and projected needs of the hospitality industry. The courses are shaped by input from hotel/motel management experts and prospective employers. These constant reviews of industrial changes have indicated that hands-on training is in great demand and the College has structured its offerings to reflect those changes.

Ivy Tech endeavors to help employers and employees keep abreast of changes in the industry. Training in courses ranging from management and sales promotion to food and beverage purchasing form a solid base of theoretical and practical knowledge.

To keep the hospitality industry running smoothly, industry needs qualified personnel experienced in such jobs as front office clerk, reservation manager, housekeeping supervisor, restaurant manager, purchasing agents and many other positions.

This expanding, exciting program offers both an Associate in Applied Science degree and a Technical Certificate. A flexible class schedule helps train students in the hospitality industry's emerging needs and provides limitless career opportunities.

Hotel/Restaurant Management
Associate in Applied Science Degree

Courses offered are held in conjunction with the American Hotel and Motel Association's Certification program from the educational institute.

	COURSE #	COURSE TITLE	CREDITS	
First	0711	Introduction to Hospitality		
Quarter		Management	4	
	0744	Sanitation	4	
	3444	Introduction to Food Service	3	
	8110	Communications	4	
		TOTAL		15
Second	0762	Supervisory Housekeeping	4	
Quarter	0712	Front Office Procedures	4	
	8212	Business Mathematics	4	
	8401	Human Relations	4	
		TOTAL		16
Third	0760	Hotel/Motel Maintenance 1	3	
Quarter	0742	Food and Beverage Purchasing		
		and Control	4	
	0733	Food and Beverage Management		
		and Service	4	
	0913	Techniques of Supervision 1	3	
		TOTAL		14
Fourth	0110	Accounting Principles 1	4	
Quarter	0763	Hotel/Motel Maintenance 2	3	
	0753	Hotel/Motel Law	3	
	0923	Techniques of Supervision 2	3	
	8111	Business Communications	4	
		TOTAL		17
Fifth	0723	Convention Management	3	
Quarter	0510	Fundamentals of Data Processing	5	
	0752	Sales Promotion	4	
	8213	Math of Finance	4	
		TOTAL		16
Sixth	8113	Oral Communications	4	
Quarter	0751	Food and Beverage Cost Control	4	
	XXXX	Electives	4	
		TOTAL		12
Total Associate in Applied Science Degree Credits				90

Food Service
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	0110	Accounting Principles 1	4	
Quarter	0711	Hospitality Management	4	
	0733	Food and Beverage Management		
		and Service	4	
	0751	Food and Beverage Cost Control		
		Planning and Procedures	4	
		TOTAL		16
Second	0753	Hotel/Motel Law	3	
Quarter	0913	Techniques of Supervision 1	3	
	3411	Culinary Arts	2	
	3413	Introduction to Foods	2	
	3416	Culinary Theory and Skills		
		Development	3	
	3421	Nutrition	3	
		TOTAL		16
Third	3422	Volume Food Preparation	5	
Quarter	3425	Table Service	2	
	3426	Purchasing, Storeroom Procedures		
		and Stewarding	2	
	3428	Intermediate Hot Food		
		Preparation	2	
	3442	Buffet Catering	2	
	3455	Menu Design	4	
		TOTAL		17
Fourth	3461	A la Carte Food Preparation		
Quarter		and Advanced Table Service	3	
	3474	First Aid/Sanitation	2	
	8110	Communications	4	
	8401	Human Relations	4	
		TOTAL		13
Total Technical Certificate Credits				62

Information/Data Management Technology

The program is a user-oriented program which utilizes microcomputer technology within the modern automated office setting. Demand for employees with computer and business skills is particularly high in small and medium-sized firms which create, transmit, and control information by using microcomputers (independent or network configurations) as a management tool.

Office automation systems allow for the productive integration of combinations of several functionally related computerized subsystems such as word processing, spread sheeting, BASIC programming, electronic mail systems, electronic filing, graphics generation, and telecommunications. These systems may be stand-alone, shared logic, distributed or integrated.

The Associate in Applied Science degree will normally take a full-time student approximately two years to complete.

Information/Data Management Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	0510	Data Processing Fundamentals	5	
Quarter	0610	Introduction to Microcomputers	3	
	8110	Communications	4	
	0323	Business Principles and Organization	3	
		TOTAL		15
Second	8111	Business Communications	4	
Quarter	8212	Business Mathematics	4	
	0522	Computer Logic & Documentation	4	
	0603	Micro/Minicomputer Operating Systems	4	
		TOTAL		16
Third	0110	Accounting Principles 1	4	
Quarter	8113	Oral Communications	4	
	0607	Productivity Software Applications	4	
	8401	Human Relations	4	
		TOTAL		16
Fourth	0120	Accounting Principles 2	4	
Quarter	0609	Electronic Spreadsheets	4	
	0512	BASIC Language Programming	5	
	0608	Microcomputer Word Processing	4	
		TOTAL		17
Fifth	0567	Introduction to Database Management	4	
Quarter	0560	Data Communications	4	
		Elective Course(s)		
		TOTAL		8 +
Sixth	0605	Microcomputer Database Design & Management	4	
Quarter	0540	Systems Analysis and Design	4	
	0601	Office Automation	3	
		Elective Course(s)		
		TOTAL		11 +
				81 +

Students may elect to pursue a related minor as part of their Associate degree. Requirements for selected minors offered are available through the Program Chairperson.

Information/Data Management Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	0510	Data Processing Fundamentals	5	
Quarter	0610	Introduction to Microcomputers	3	
	8110	Communications	4	
		TOTAL		12
Second	8111	Business Communications	4	
Quarter	0607	Productivity Software Applications	4	
	0603	Micro/Minicomputer Operating Systems	4	
	8212	Business Math	4	
		TOTAL		16
Third	0512	BASIC Language Programming	5	
Quarter	0608	Microcomputer Word Processing	4	
	0609	Electronic Spreadsheets	4	
	0110	Accounting Principles 1	4	
		TOTAL		17
				45

Paralegal Technology

The demand for trained paralegals is increasing. The number of job opportunities is projected to increase significantly by the mid 1990s according to employment analysts. Ivy Tech recognizes this demand and has made the commitment to meet the present and projected needs of the legal profession. The curriculum is shaped by input from attorneys and other professionals in the legal field. This input then is utilized to design a curriculum which will produce trained and knowledgeable paralegals.

As a trained specialist, your duties can range from assisting in complicated legal research to scheduling court appearances. Your training may provide a wide variety of job opportunities and mobility. Classroom lectures in such areas as civil procedure, research and writing, wills and trusts, combined with an elective internship, will allow you to prepare in just two years for an exciting job as a paralegal.

If you are interested in a career with above-average entry-level pay, and if you are motivated to enter an exciting field which requires self-discipline and a desire to succeed, Ivy Tech's two-year, Associate Degree program is for you!

Paralegal Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	8110	Communications	4	
Quarter	8212	Business Mathematics	4	
	8401	Human Relations	4	
	xxxx	Science Elective	4	
		TOTAL		16
Second	13xx	Office Management & Ethics	4	
Quarter	1302	Legal Research & Writing (8110-Prerequisite)	4	
	8111	Business Communications	4	
	8213	Mathematics of Finance	4	
		TOTAL		16
Third	1303	Civil Procedure	4	
Quarter	0112	Accounting for Non-Majors	4	
	1309	Torts	4	
	13xx	Business Associations	4	
		TOTAL		16
Fourth	1319	Claims Investigation	4	
Quarter	1318	Contracts & Commercial Law	4	
	1306	Criminal Law & Procedures*	4	
	1308	Property Law	4	
		TOTAL		16
Fifth	0610	Intro to Microcomputers	3	
Quarter	1305	Family Law	4	
	1316	Litigation	4	
		TOTAL		11
Sixth	1307	Wills, Trusts & Probate	4	
Quarter	13xx	Appellate Procedure**	4	
	13xx	Computers in the Law Office***	4	
		TOTAL		12
Seventh	1314	Bankruptcy Law	4	
Quarter	EEEE	Elective	4***	
	EEEE	Elective	4***	
	EEEE	Elective	4***	
		TOTAL		16

Total Associate in Applied Science Degree Credits   103

NOTE: Classes which require no prerequisite may be taken in any order.

*(Prerequisite 1303)
**(Prerequisite 1303 and 1306)
***(Prerequisite 0610 and 1302)

Quality Control Technology

In today's world, quality control is an integral and essential part of every business operation.

Ivy Tech's curriculum reflects this requirement and has made a commitment to meet the projected needs of business and industry. Courses are routinely shaped by input from quality control technician experts and prospective employers.

Ivy Tech endeavors to help employers and employees adapt to quality control standards. Our program is organized to prepare individuals to enter the field or to provide quality control employed persons the opportunity to upgrade and certify skills.

To keep manufacturing, service and other industries operating at optimum levels, qualified quality control technicians who have the skills to work with engineering and management teams to improve product quality and assure quality program effectiveness are needed.

The Associate in Applied Science degree program can lead you to a job opportunity in a variety of production fields, including agricultural/biological, chemical and industrial engineering. Graduates are eligible to take the American Society of Quality Control examination which leads to industry certification as a Quality Control Technician.

Quality Control
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	0901	Quality Control Concepts		
Quarter		and Techniques 1	4	
	8203	Technical Math 1	4	
	0913	Techniques of Supervision 1	3	
	8110	Communications	4	
		TOTAL		15
Second	0902	Quality Control Concepts		
Quarter		and Techniques 2	4	
	8204	Technical Math 2	4	
	0909	Mechanical Metrology	4	
	8111	Business Communications	4	
		TOTAL		16
Third	0903	QC Engineering Principles		
Quarter		and Techniques	4	
	8210	Statistics	3	
	0915	Electrical Metrology	4	
	8401	Human Relations	4	
		TOTAL		15
Fourth	0904	Statistical Concepts		
Quarter		and Techniques	4	
	0575	Topics in Data Processing	4	
	8301	Physical Science	3	
	0916	Procurement Quality Control	4	
		TOTAL		15
Fifth	0905	QC Engineering Theory		
Quarter		and Applications	4	
	0907	Reliability Objectives	4	
	0967	Drafting and Manufacturing		
		Standards	3	
	0908	Introduction to Non-Destructive		
		Tests	4	
		TOTAL		15
Sixth	0917	Reliability Techniques	4	
Quarter	9414	Blueprint Reading 1	3	
	0607	Productivity Software		
		Applications	4	
	XXXX	Elective	3	
		TOTAL		14

Total Associate in Applied Science Degree Credits   90

Quality Control Associate in Applied Science degree electives may be chosen from one of the following areas of concentration:

COURSE #	COURSE TITLE	CREDITS
0323	Business Principles and Organization	3
0609	Electronic Spreadsheets	4
0923	Techniques of Supervision 2	3
0963	Manufacturing Processes I	3
0982	Management by Objectives	3
0983	Time Management	3
7548	Basic Geometric Dimensioning and	
	Tolerance	3

Secretarial Sciences

The secretary is a versatile person who can perform a wide variety of duties. In addition to dictation and typing, many secretaries are found filing, routing mail and answering telephones. In more responsible positions, the administrative secretary may be called on to answer letters, do statistical research, and write reports.

The secretary will find entry-level employment opportunities in almost every facet of business, industry, government, and public or private non-profit agencies. Some will find it profitable to pursue a career as an administrative secretary through Ivy Tech's Associate in Applied Science degree Program in Secretarial-Administrative.

This program will take a full-time student approximately two years to complete.

Secretarial Administrative
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	1210	Shorthand 1	4	
Quarter	1212	Typewriting 1	4	
	8110	Communications	4	
	0323	Business Principles and Organization	3	
		TOTAL		15
Second	1220	Shorthand 2	4	
Quarter	1222	Typewriting 2	4	
	8111	Business Communications	4	
	XXXX	Elective	4	
		TOTAL		16
Third	1230	Shorthand 3	4	
Quarter	1232	Typewriting 3	4	
	8212	Business Mathematics	4	
	1224	Records Management	3	
		TOTAL		15
Fourth	0110	Accounting Principles 1	4	
Quarter	1242	Typewriting 4	4	
	8113	Oral Communications	4	
	1236	Office Calculating Machines 1	3	
		TOTAL		15
Fifth	8401	Human Relations	4	
Quarter	0122	Business Law 1	3	
	1255	Word Processing Fundamentals Module 1	2	
	1256	Word Processing Operations	4	
	1267	Machine Dictation and Transcription	2	
		TOTAL		15
Sixth	1254	Word Processing Concepts	2	
Quarter	1241	Clerical Office Procedures	3	
	1262	Typewriting 5	4	
	0143	Business Law 2	3	
	XXXX	Elective	4	
		TOTAL		16

Total Associate in Applied Science Degree Credits 92
(A Technical Certificate in Secretarial Administration and Word Processing is also offered.)

1255 Module 1 and 1256 Corequisites

Administrative Secretarial Associate degree electives may be chosen from one of the following areas of concentration:

COURSE #	COURSE TITLE	CREDITS
Administrative Secretarial Electives:		
1114	Marketing 1	4
0913	Techniques of Supervision 1	3
1226	Data Entry	4
1240	Shorthand 4	4
1257	Word Processing Applications	4
1275	Word Processing Files Management	4
8501	Field Study/Co-op Education	6
1270	Introduction to Typewriting (Non-Majors)*	3

*1270 Introduction to Typewriting may be necessary for some students who have had no previous keyboard training, but is not included in the total hours required for graduation.

COURSE #	COURSE TITLE	CREDITS
Microcomputer Electives:		
0608	Microcomputer Word Processing	4
0607	Productivity Software Applications	4
0609	Electronic Spreadsheets	4
8501	Field Study/Co-op Education	5

Secretarial—Medical Minor

In addition to the usual secretarial duties, the medical secretary serves as a liaison between the doctor and patient and is important in building and maintaining good relations with the patients. Entry level positions are found in doctors' offices, clinics, hospitals, and other health related organizations.

Many secretaries will find that they can upgrade their job skills by taking just a course or two. Other students will find that they can open the door to an entirely new career as a medical secretary by pursuing Ivy Tech's Technical Certificate in Secretarial-Medical. This program will take the full-time student approximately one year to complete. Still other students will find it beneficial to pursue courses from the College's Secretarial-Administrative Program along with their Secretarial-Medical courses.

Medical Secretary
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	1212	Typewriting 1	4	
Quarter	8401	Human Relations	4	
	8212	Business Mathematics	4	
	1224	Records Management	3	
		TOTAL		15
Second	3722	Medical Typewriting 1	3	
Quarter	8110	Communications	4	
	3721	Medical Office Procedures	4	
	XXXX	Elective	4	
		TOTAL		15
Third	3732	Medical Office Communications	4	
Quarter	3713	Medical Office Bookkeeping	4	
	0323	Business Principles and Organization	3	
	XXXX	Elective	3	
		TOTAL		15
Fourth	9355	Medical Terminology	2	
Quarter	3743	Machine Transcription Medical 1	3	
	8111	Business Communications	4	
	1236	Office Calculating Machines 1	3	
	XXXX	Elective	4	
		TOTAL		15
Total Technical Certificate Credits				60

1255 Module 1 and 1256 Corequisites

Medical Secretary electives may be chosen from the following areas of concentration:

COURSE #	COURSE TITLE	CREDITS
1255	Word Processing Fundamentals Module 1 & 2	4
1256	Word Processing Operations	4
1257	Word Processing Applications	4
1275	Word Processing Files Management	4
3769	Medical Assistance Administrative Externship	4
3771	Medical Insurance	3
9350	Medical Law and Ethics	2
0608	Microcomputer Word Processing	4
1270	Introduction to Typewriting (Non-Majors)*	3

*1270 Introduction to Typewriting may be necessary for some students who have had no previous keyboard training, but is not included in the total hours required for graduation.

Secretarial—Word Processing
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	1212	Typewriting 1	4	
Quarter	8110	Communications	4	
	8212	Business Mathematics	4	
	0323	Business Principles and Organization	3	
		TOTAL		15
Second	1222	Typewriting 2	4	
Quarter	8111	Business Communications	4	
	1255	Word Processing Fundamentals Module 1 & 2	4	
	1256	Word Processing Operations	4	
		TOTAL		16
Third	1232	Typewriting 3	4	
Quarter	0110	Accounting Principles 1	4	
	1257	Word Processing Applications	4	
	XXXX	Elective	3	
		TOTAL		15
Fourth	1275	Word Processing Files Management	4	
Quarter	1242	Typewriting 4	4	
	8113	Oral Communications	4	
	1224	Records Management	3	
		TOTAL		15
Total Technical Certificate Credits				61

1255 Module I and 1256 Corequisites

Word Processing Technical Certificate electives may be chosen from one of the following:

COURSE #	COURSE TITLE	CREDITS
1210	Shorthand 1	4
1220	Shorthand 2	4
1236	Office Calculating Machines 1	3
1262	Typewriting V	4
0607	Productivity Software Applications	4
0609	Electronic Spreadsheets	4
0613	Integrated Business Software	4
0510	Data Processing Fundamentals	5
1270	Introduction Typewriting (Non-Majors)*	3

*1270, Introduction to Typewriting may be necessary for some students who have had no previous keyboard training, but is not included in the total hours required for graduation.

Division of Human Services and Health Technologies

Recognizing the increasing employment opportunities in the expanding fields of human social and health services, the College's Division of Human Services and Health Technologies prepares students to become competent members of a human services or health care team. Classroom, laboratory, and clinical experiences prepare students to serve in medical facilities, child care centers, and numerous social service or health care settings. Graduates and selected course completers can look toward careers in various social and health service fields including substance abuse, gerontology and other para-professional opportunities.

Child Care Technology

The need for trained workers in child care is high and is expected to continue to grow as parents, grandparents and guardians remain in the work force. The present economic conditions indicate there will be an on-going need for child care professionals to work in day care centers, preschool facilities as well as public and private homes for children. Ivy Tech's Child Care Technology program is designed to equip graduates with the skills, knowledge and understanding of early childhood development, parent-child relations and the handling of groups of young children.

Graduates of this program would meet job entry requirements for employment in public or private homes for children, day care centers, nursery schools, or schools for special children. Child Care Technology graduates earn a Technical Certificate after completing three-quarters, full-time. Students may also attend on a part-time basis.

Child Care Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	2601	Introduction to Child Care	4	
Quarter	8110	Communications	4	
	8401	Human Relations	4	
	2641	Creative Movements	4	
		TOTAL		16
Second	2651	Language Arts	4	
Quarter	2626	Science and Social Studies for		
		Preschool Children	4	
	2624	Participation 1	4	
	2627	Seminar 1	2	
	0323	Business Principles and		
		Organization	3	
		TOTAL		17
Third	2610	Child Growth and Development	4	
Quarter	2633	Community Resources	4	
	2631	Participation 2	4	
	2637	Seminar 2	2	
		TOTAL		14
Fourth	2642	Nutrition and Meal Planning	4	
Quarter	2625	Legal Aspects	3	
	2645	Participation 3	4	
	2647	Seminar 3	2	
	2643	Preschool Art	4	
		TOTAL		17
Fifth	2655	Bookkeeping	4	
Quarter	2612	Childhood Health	3	
	2654	Participation 4	4	
	2657	Seminar 4	2	
	2660	Preschool Music	4	
		TOTAL		17
Sixth	2623	Cognitive and Creative Activities	3	
Quarter	2661	Management Techniques	4	
	2663	Audiovisual Materials		
		and Methods	4	
	2665	Participation 5	4	
	2667	Seminar 5	2	
		TOTAL		17
Total Associate in Applied Science Degree Credits				98

Health Care Administration

As the population of the elderly increases, more extended-care facilities will be needed. Competent and qualified administrators to head these long-term care facilities will also be in greater demand. At Ivy Tech, we offer an Associate in Applied Science degree in health care administration. Whether you seek to upgrade your present skill as an employed administrator or desire to enter the field in an entry-level position, consider Ivy Tech's program of study.

Preparing specific courses geared to the industry, Ivy Tech's health care administration curriculum is shaped by input from health care professionals. Providing quality health care environments through knowledgeable, well-qualified administrative personnel is Ivy Tech's commitment. With an Associate in Applied Science degree, administrators can enhance their present skills and knowledge.

Ivy Tech is also in the process of receiving approval by the Indiana State Board of Registration and Education for Health Facility Administrators to meet the 200-contact-hour training program prerequisite for licensure as a health facility administrator.

Health Care Administration
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	8110	Communications	4	
Quarter	8401	Human Relations	4	
Fall	8212	Business Mathematics	4	
	XXXX	Elective	4	
		TOTAL		16
Second	4052	Psychology of Aging	4	
Quarter	8111	Business Communications	4	
Winter	8213	Mathematics of Finance	4	
	4055	Nursing Home Administration	4	
		TOTAL		16
Third	0112	Accounting for Non-Majors	4	
Quarter	4053	Physiology of Aging	4	
Spring	8113	Oral Communications	4	
	4040	Basic Health Sciences	4	
		TOTAL		16
Fourth	1114	Marketing 1	4	
Quarter	0166	Management	3	
Fall	2761	Interdisciplinary Team	4	
	11xx	Long Term Care Internship	5	
		TOTAL		16
Fifth	0322	Personnel Administration	4	
Quarter	0942	Purchasing & Inventory Control	4	
Winter	4041	Directed Practice 1	6	
		TOTAL		14
Sixth	4051	Directed Practice 2	4	
Quarter	4061	Directed Practice 3	4	
Spring	4065	Human Services Topical Seminar	4	
		TOTAL		12
Total Associate in Applied Science Degree Credits				90

Human Services

The field of Human Services encompasses many different populations and settings as we move toward a more service-oriented society. Career opportunities have expanded both in the public and the private sector.

As a Human Services professional, you will reach out to individuals, to families, and to communities. The Human Services program gives you the broad understanding to help others meet their psychological, social, and environmental needs. We prepare you to be a Human Services Generalist with the option to specialize in the areas of Substance Abuse or Gerontology. You will be able to work in a variety of settings such as community centers, group homes, alcoholism centers, nursing homes, etc. You can be the link to help others learn to help themselves.

Everyone in the program takes a core of Human Services courses since many of the same skills are needed to work in a variety of settings. The Generalist Minor gives you the most flexibility to choose some of your coursework. After completing this program, you could have a job title such as Case Aid, Community Outreach Worker, Volunteer Coordinator, Residential Houseparent, etc.

The Substance Abuse Minor prepares you for work in the field of addictions. The specialized courses in substance abuse are endorsed by the Indiana Counselors Association on Alcohol and Drug Abuse (ICAADA). The course work gives you a solid foundation to take the basic state certification examination and to seek employment as a substance abuse counselor.

The Gerontology Minor focuses on working with older adults, a population that is rapidly increasing. Two of the courses offered in the program meet the state requirements to be an Activity Director or Social Services Director in a nursing home. Other job opportunities could be in the areas of Adult Day Care or Senior Citizens Programs.

Human Services Generalist
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	4010	Human Services 1	4	
Quarter	8110	Communications	4	
	8401	Human Relations	4	
	8402	Psychology	4	
		TOTAL		16
Second	4005	Motivation and Learning	4	
Quarter	4062	Introduction to Community Organizations	4	
	8117	Effective Listening	2	
	9359	Cardiopulmonary Resuscitation	1	
	8113	Oral Communications	4	
		TOTAL		15
Third	4032	Helping Relationship Techniques	4	
Quarter	4041	Directed Practice 1	6	
	xxxx	Elective	4	
		TOTAL		14
Fourth	Summer Quarter — taking courses			
Quarter	optional			
Fifth	4020	Human Services 2	3	
Quarter	4034	Interviewing and Counseling	4	
	8405	Social Problems	4	
	xxxx	Elective	4	
		TOTAL		15
Sixth	4050	Group Process and Skills	4	
Quarter	4051	Directed Practice 2	4	
	8111	Business Communications	4	
	xxxx	Elective	4	
		TOTAL		16
Seventh	0913	Techniques of Supervision 1	3	
Quarter	4060	Program Planning and Evaluation	4	
	4061	Directed Practice 3	4	
	xxxx	Elective	3	
		TOTAL		14
Total Associate in Applied Science Degree Credits				90

Human Services Associate in Applied Science Degree electives may be chosen from the following areas of concentration:

COURSE #	COURSE TITLE	CREDITS
0575	Topics in Data Processing	4
2610	Growth and Development	4
1157	Entrepreneurship	3
4006	Families	3
4022	Substance Abuse in Society	4
4052	Psychology of Aging	4
4066	Activity Directors Course	4
4067	Social Services in Extended Care	4

Human Services
Substance Abuse Minor
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	4010	Human Services 1	4	
Quarter	8110	Communications	4	
	8401	Human Relations	4	
	8402	Psychology	4	
		TOTAL		16
Second	4005	Motivation and Learning	4	
Quarter	4022	Substance Abuse in Society	4	
	4062	Introduction to Community Organizations	4	
	8117	Effective Listening	2	
	9359	Cardiopulmonary Resuscitation	1	
		TOTAL		15
Third	4023	Problems of Substance Abuse	4	
Quarter	4032	Helping Relationship Techniques	4	
	4041	Directed Practice 1	6	
		TOTAL		14
Fourth	Summer Quarter—taking courses			
Quarter	optional			
Fifth	4020	Human Services 2	3	
Quarter	4034	Interviewing and Counseling	4	
	8111	Business Communication	4	
	8113	Oral Communications	4	
		TOTAL		15
Sixth	4024	Treatment of Substance Abuse	4	
Quarter	4050	Group Process and Skills	4	
	4051	Directed Practice 2	4	
	8405	Social Problems	4	
		TOTAL		16
Seventh	4060	Program Planning and Evaluation	4	
Quarter	4026	Counseling with Substance Abuse	4	
	4061	Directed Practice 3	4	
	4065	Human Services Topical Seminar	4	
		TOTAL		16
Total Associate in Applied Science Degree (Substance Abuse Minor) Credits				92

Human Services
Gerontology Minor
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	4010	Human Services 1	4	
Quarter	8110	Communications	4	
	8401	Human Relations	4	
	8402	Applied Behavioral Psychology	4	
		TOTAL		16
Second	4005	Motivation and Learning	4	
Quarter	4052	Psychology of Aging	4	
	4062	Introduction to Community Organizations	4	
	8117	Effective Listening	2	
	9359	Cardiopulmonary Resuscitation	1	
		TOTAL		15
Third	4032	Helping Relationship Techniques	4	
Quarter	4041	Directed Practice 1	6	
	4053	Pysiology of Aging	4	
		TOTAL		14
Fourth	Summer Quarter—taking courses			
Quarter	optional			
Fifth	4020	Human Services 2	3	
Quarter	4034	Interviewing and Counseling	4	
	8111	Business Communication	4	
	XXXX	Elective	4	
		TOTAL		15
Sixth	4050	Group Process and Skills	4	
Quarter	4051	Directed Practice 2	4	
	8405	Social Problems	4	
	XXXX	Elective	3	
		TOTAL		15
Seventh	4060	Program Planning and Evaluation	4	
Quarter	4061	Directed Practice 3	4	
	XXXX	Elective	4	
	8113	Oral Communications	4	
		TOTAL		16
Total Associate in Applied Science Degree (Gerontology Minor) Credits				91

Human Services Associate in Applied Science Degree electives may be chosen from several areas of concentration.

COURSE #	COURSE TITLE	CREDITS
4006	Families in American Culture	3
4065	Human Services Topical Seminar	1-4
4067	Social Services in Extended Care	4
4066	Activity Directors Course	4
0913	Techniques of Supervision	3

Medical Assistant

Medical assistants are multi-skilled practitioners who are qualified to provide supportive health care services under the supervision of a physician. They assist with patient care, execute administrative and clinical procedures, and often perform managerial and supervisory functions. Competence in the field requires that medical assistants communicate effectively, adhere to ethical and legal standards of medical practice, recognize and respond to emergencies, and demonstrate professional characteristics. Medical assistants handle most of the paper work in the physician's office. They make appointments, maintain medical and financial records, process insurance claims, and evaluate computerized data. They also order medical supplies and prepare patients for examination. In addition, they may assist the physician in minor surgery, perform simple lab tests, assess vital signs, and operate an electrocardiogram or diathermy machine.

The program is accredited by the American Association of Medical Assistants (AAMA) in collaboration with the American Medical Association's (AMA) Committee on Allied Health Education and Accreditation (CAHEA).

Students are prepared for the national examination required for certification as a medical assistant (CMA).

Employment opportunities for well-trained medical assistants may be found in physicians' offices, medical clinics, hospitals, nursing homes, health insurance industry offices, and in other health care agencies.

Medical Assistant
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	1212	Typewriting 1	4	
Quarter	3721	Medical Office Procedures/		
		Administrative	4	
	9353	Anatomy and Physiology 1	4	
	9355	Medical Terminology	4	
	9359	Cardiopulmonary Resuscitation	1	
		TOTAL		17
Second	3712	Medical Office Procedures 1	4	
Quarter	3713	Medical Office Bookkeeping	4	
	3719	Medical Typewriting 1	3	
	3766	First Aid/Emergency Care	3	
	9354	Anatomy and Physiology 2	4	
		TOTAL		18
Third	3730	Medical Laboratory Techniques	4	
Quarter	3732	Medical Office Communications	4	
	3742	Medical Office Procedures 2	4	
	3771	Medical Insurance	3	
	9310	Pharmacology	4	
		TOTAL		19
Fourth	3729	Medical Assistant Clinical		
Quarter		Externship	4	
	3743	Machine Transcription Medical 1	3	
	3769	Medical Assistant Administrative		
		Externship	4	
	8401	Human Relations	4	
	9350	Medical Law and Ethics	2	
		TOTAL		17
Fifth	0575	Topics in Data Processing	4	
Quarter	3744	Machine Transcription Medical 2	3	
	4406	Holistic Approach to Health	2	
	8111	Business Communications	4	
	8308	General Microbiology	3	
		TOTAL		16
Sixth	3752	Medical Office Procedures		
Quarter		Clinical 3	4	
	3761	Community Health	2	
	3763	Medical Office Management	3	
	9356	Disease Conditions	3	
	XXXX	Elective	2	
		TOTAL		14

Total Associate in Applied Science Degree Credits   101

Medical Assistant
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	1212	Typewriting 1	4	
Quarter	3721	Medical Office Procedures/		
		Administrative	4	
	9353	Anatomy and Physiology 1	4	
	9355	Medical Terminology	4	
	9359	Cardiopulmonary Resuscitation	1	
		TOTAL		17
Second	3712	Medical Office Procedures 1	4	
Quarter	3713	Medical Office Bookkeeping	4	
	3719	Medical Typewriting 1	3	
	3766	First Aid/Emergency Care	3	
	9354	Anatomy and Physiology 2	4	
		TOTAL		18
Third	3730	Medical Laboratory Techniques	4	
Quarter	3732	Medical Office Communications	4	
	3742	Medical Office Procedures 2	4	
	3771	Medical Insurance	3	
	9310	Pharmacology	4	
		TOTAL		19
Fourth	3729	Medical Assistant Clinical		
Quarter		Externship	4	
	3743	Machine Transcription Medical 1	3	
	3769	Medical Assistant Administrative		
		Externship	4	
	8401	Human Relations	4	
	9350	Medical Law and Ethics	2	
		TOTAL		17

Total Technical Certificate Credits   71

Practical Nursing

Licensed Practical Nurses are essential members of the nursing profession responsible for numerous nursing functions. A partial list of functions include patient hygiene, taking blood pressures, performing therapeutic measures, administering medications, monitoring patients receiving intravenous therapy and blood transfusions, and recording patient data. The employment outlook for practical nurses is expected to be very good during the next few years. Employment is available in hospitals, nursing homes, private duty, and some public health agencies.

The Practical Nursing program provides instruction for initial employment in the nursing field. The program meets the requirements of the Indiana State Board of Nurses' Registration on Education and prepares candidates for the examination required for licensure as a practical nurse in Indiana. Graduates of the one-year program are awarded a Technical Certificate.

In the Practical Nursing Program, **all** courses must be at "C" grade level or above.

Practical Nursing
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	4401	Foundation of Nursing	3	
Quarter	4402	Collecting, Reporting and Recording Patient Data	3	
	4403	Therapeutic Measures	3	
	4406	Holistic Approach to Health	3	
	4407	Nutrition	2	
	9310	Pharmacology	2	
	9353	Anatomy and Physiology 1	4	
	4435	Vocational Issues and Trends	1	
		TOTAL		21
Second	9354	Anatomy and Physiology 2	4	
Quarter	9310	Pharmacology	4	
	4437	Dermatologic and E.E.N.T. Nursing	1	
	4403	Therapeutic Measures	3	
	4438	Gerontology	3	
	4439	Geriatric Clinical Nursing	3	
		TOTAL		18
Third	4423	Medical Surgical Clinical Nursing 1	6	
Quarter	4432	Medical Surgical Clinical Nursing 2	3	
	4425	Musculoskeletal and Neurological Nursing	2	
	4415	Cardiovascular Nursing	2	
	4419	Respiratory Nursing	2	
	4416	Gastrointestinal Nursing	2	
	4412	Endocrine Nursing	2	
		TOTAL		19
Fourth	4432	Medical Surgical Clinical Nursing 2	4	
Quarter	4463	Maternal/Child Clinical Nursing	4	
	4455	Maternal/Child Health Nursing	5	
	4426	Genitourinary	2	
	4435	Vocational Issues and Trends	1	
		TOTAL		16
Total Technical Certificate Credits				74

Radiologic Technology

A registered radiologic technologist, an integral part of the allied health care team will assist in the diagnosis and treatment of injuries and disease, by providing radiologists and other medical practitioners with high quality images.

The program is two years in length and the quarters run consecutively. A typical week consist of classes two days per week and hospital experience three days per week. During the two year period, students in the program will follow a set curriculum. Each student will have the opportunity to acquire sufficient hospital experience for learning and demonstration of clinical competence.

Successful completion of the program will qualify the student for eligibility to take the American Registry of Radiologic Technologists examination. Completion of the program will also enable the graduate to apply for the Indiana State Board of Health Certificate.

Students will be introduced to the x-ray field during the first quarter. Subsequent courses will introduce and cover in depth many subject areas such as: radiographic positioning, principles of exposure, radiation protection, radiation physics and biology, introduction to computers, nursing procedures, communications and human relations.

In addition to the above mentioned courses, during clinical training students will learn to operate many types of x-ray equipment, film processors, darkroom equipment, portable x-ray machines, x-ray related devices, as well as the meaning of patient care, professionalism and responsibility.

Currently there is a nationwide shortage of radiologic technologists. Students will be entering a wide open job market.

Radiologic Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	4620	Orientation to X-Ray	4	
Quarter	9305	Technical Math for Health Occupations	4	
	9353	Anatomy and Physiology 1	4	
	9350	Medical Law and Ethics	2	
	9355	Medical Terminology	2	
		TOTAL		16
Second	4609	Nursing Procedures for X-Ray	2	
Quarter	4623	X-Ray Clinical Education 1	4	
	4624	Radiographic Positioning 1	3	
	9354	Anatomy and Physiology 2	4	
		TOTAL		13
Third	0575	Computer Programming for Technicians	2	
Quarter	4613	Radiation Physics 1	3	
	4633	Radiographic Positioning 2	3	
	4638	X-Ray Clinical Education 2	4	
		TOTAL		12
Fourth	4625	Radiographic Exposure 1	3	
Quarter	4643	Radiographic Positioning 3	3	
	4648	X-Ray Clinical Education 3	4	
	8110	Communications	4	
	9359	Cardiopulmonary Resuscitation	1	
		TOTAL		15
Fifth	4634	Radiographic Exposure 2	3	
Quarter	4650	Radiographic Positioning 4	3	
	4655	X-Ray Clinical Education 4	6	
	XXXX	Elective	2	
		TOTAL		14
Sixth	4642	Imaging Techniques	3	
Quarter	4668	X-Ray Clinical Education 5	6	
	9356	Disease Conditions	3	
	9643	EKG	1	
		TOTAL		13
Seventh	4672	Radiobiology	3	
Quarter	4678	X-Ray Clinical Education 6	6	
	4699	Radiographic Quality Assurance	3	
		TOTAL		12
Eighth	4685	General Exam Review	4	
Quarter	4688	X-Ray Clinical Education 7	6	
	8401	Human Relations	4	
		TOTAL		14
Total Associate in Applied Science Degree Credits				109

Respiratory Care Practitioner

These highly skilled technicians and therapists perform oxygen therapy, aerosol therapy, chest physical therapy, and techniques of intermittent and continuous mechanical ventilation.

Technicians are also employed in such diverse areas as arterial blood gas analysis, pulmonary function laboratories, and pulmonary rehabilitation, and management.

Respiratory Therapy Technician programs at Ivy Tech are fully accredited by the Joint Review Committee for Respiratory Therapy Education and the American Medical Association's Committee on Allied Health Education and Accreditation. Successful completion of this seven-quarter program leads to an Associate in Applied Science Degree awarded by the College and eligibility to take the certification examination which is nationally offered by the National Board for Respiratory Therapy.

The Respiratory Therapy program exceeds all of the essentials established by the credentialing agency. Over 1,000 hours are spent in five of the largest hospitals in the region under supervision of physicians and respiratory therapists. The program is a challenging blend of individual and group instruction to prepare the student for success in a demanding field.

Respiratory Care Practitioner
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	8110	Technical Communications	4	
Quarter	9305	Technical Math	4	
	8308	Microbiology	3	
	9322	Biophysics	3	
	9353	Anatomy and Physiology 1	4	
		TOTAL		18
Second	4812	Respiratory Care Science 1	6	
Quarter	4813	Nursing Techniques	2	
	4820	Cardiopulmonary Physiology	4	
	8307	General Chemistry	3	
	9354	Anatomy and Physiology 2	4	
		TOTAL		19
Third	4821	Respiratory Care Science 2	6	
Quarter	4823	Clinical Practicum 1	5	
	4831	Clinical Medicine and Pathophysiology	4	
	4844	Cardiopulmonary Lab Diagnosis	4	
		TOTAL		19
Fourth	4833	Clinical Practicum 2	8	
Quarter	4835	Respiratory Care Science 3	6	
		TOTAL		14
Fifth	4841	Clinical Practicum 3	5	
Quarter	4850	Therapist Practicum 1	7	
	9358	Pharmacology	3	
		TOTAL		15
Sixth	4851	Therapist Practicum 2 (Part 1)	4	
Quarter	4814	Advanced Respiratory Care	4	
	4815	Cardiopulmonary Pathophysiology	3	
	4816	Cardiopulmonary Monitoring	3	
		TOTAL		14
Seventh	4851	Therapist Practicum 2 (Part 2)	3	
Quarter	0913	Techniques of Supervision	3	
	8401	Human Relations	4	
	9350	Medical Law and Ethics	2	
	9472	Computer Programming	2	
		TOTAL		14
Total Associate in Applied Science Degree Credits				113

Surgical Technology

The health care industry changes rapidly and so does the education required. Knowledge and skills beyond the minimum educational requirements of a surgical technologist are in demand.

Ivy Tech's curriculum has recognized this demand and made the commitment to meet the present and projected needs of the health care industry.

Ivy Tech's Surgical Technology program provides a significant portion of course work in the clinical environment of the surgeries of local major hospitals as well as lectures in a college classroom. Upon graduation, the student is eligible to take the national certification exam. The employment outlook for surgical technologists remains good.

Surgical Technology
Technical Certificate

	COURSE #	COURSE TITLE	CREDITS	
First	4201	Surgical Concepts	2	
Quarter	4211	Surgical Techniques 1	10	
	8308	General Microbiology	3	
	9350	Medical Law and Ethics	2	
	9353	Anatomy and Physiology	4	
	9355	Medical Terminology	2	
		TOTAL		23
Second	4221	Surgical Procedures 1	5	
Quarter	4222	Clinical Applications 1	8	
	9354	Anatomy and Physiology	4	
	9358	Pharmacology	3	
		TOTAL		20
Third	4230	Surgical Procedures 2	5	
Quarter	4231	Clinical Applications 2	10	
	8401	Human Relations	4	
		TOTAL		19
Fourth	4240	Clinical Applications 3	10	
Quarter	4242	Surgical Procedures 3	4	
		TOTAL		14
Total Technical Certificate Credits				76

Proposed Programs 1988-89

The following programs of study are under review for the 1988-89 academic year.

Associate of Science Degree Nursing*

The proposed Associate of Science Degree in Nursing (ADN), a two-year program, will meet the requirements and expectations of the Indiana State Board of Nursing for licensure of Registered Nurses. The new expanded Associate degree program in Indianapolis will provide students the opportunity to transfer to one of the four local four-year baccalaureate nursing programs.

The associate degree nurse functions as a provider and manager of client care, client teacher, effective communicator, and involved member within the profession of nursing. Graduates of the program will have the opportunity to transfer to a BSN program. The general education courses will be offered by a recognized four-year college or university.

The purposes of the College's Associate of Science Degree in Nursing Program are to prepare students for registered nursing positions, and to maintain a flexible program that is responsive to the needs of the community and individual students.

*Pending final approval at the time of publication of the bulletin.

Associate of Science Degree in Nursing
(Two-Year Program)

	COURSE #	COURSE TITLE	CREDITS
Fall	45XA	Introduction to Nursing	6
Quarter	45XB	Introduction to Nursing Practicum	6
Fall		Chemistry	3
Semester		Introductory Psychology	3
Winter	45XC	Life Cycle Nursing I: Prenatal Period/Infancy	6
Quarter	45XD	Nursing Practicum I: Prenatal Period/Infancy	6
Spring		Anatomy and Physiology I	4
Semester		Lifespan Development	3
Spring	45XE	Life Cycle Nursing II Toddler to Adolescence	6
Quarter	45XF	Nursing Practicum II: Toddler to Adolescence	6
Summer Semester		Optional: Some General Education courses may be taken at this point.	
Summer Quarter		No summer nursing classes.	
Fall	45XG	Life Cycle Nursing III: Early Adulthood	6
Quarter	45XH	Nursing Practicum III: Early Adulthood	6
Fall		Anatomy and Physiology II	4
Semester		Microbiology and Lab	4
Winter	45XI	Life Cycle Nursing IV: Middle Adulthood	6
Quarter	45XJ	Nursing Practicum IV: Middle Adulthood	6
Spring		English Composition	3
Semester		Sociology	3
Spring	45XK	Life Cycle Nursing V: Older Adulthood and Aging	5
Quarter	45XL	Nursing Practicum V: Older Adulthood and Aging	5
	4507	Issues in Nursing	2

Associate of Science Degree in Nursing
(LPN-to-ADN Career Mobility)

	COURSE #	COURSE TITLE	CREDITS
Summer	4501	Transition to ADN	8
Quarter	4502	Practicum for Transition	5
(Enter LPN's		Credits for LPN Program	23
Only)			
Fall	45XG	Life Cycle Nursing III: Early Adulthood	6
Quarter	45XH	Nursing Practicum III: Early Adulthood	6
Winter	45XI	Life Cycle Nursing IV: Middle Adulthood	6
Quarter	45XJ	Nursing Practicum IV: Middle Adulthood	6
Spring		English Composition	3
Semester		Sociology	3
Spring	45XK	Life Cycle Nursing V: Older Adulthood and Aging	5
Quarter	45XL	Nursing Practicum V: Older Adulthood and Aging	5
	4507	Issues in Nursing	2
Associate of Science Degree Totals:			99

Commercial Art Technology*

An Associate of Science and an Associate of Applied Science Degree program in Commercial Art Technology will provide an additional educational option for the central Indiana student population through articulation with a four-year school.

The Commercial Art program will prepare students for a professional career in the visual communications field. Students will learn procedures in research, problem-solving, developing a target marketing plan, concept/theme development, client presentations and studio practices.

The program will provide experiences and competency skills in layout design, keylining, storyboarding, black and white illustration, package design, type fitting and specification, computer graphics and pre-printing processes. Special attention will be given to designing for print (collateral), space and time. Students will learn to develop and produce multi-media campaigns for product and service organizations, corporate logos, corporate identity programs and reproduction quality illustrations.

*Pending final approval at the time of publication of the bulletin.

Commercial Art Technology
Associate of Science Degree

	COURSE #	COURSE TITLE	CREDITS	
Fall		Intro to Graphic Design I	4	
Quarter	1830	Typography	4	
		Drawing for Layout & Illustration	4	
		TOTAL		12
Winter		Graphic Design II	4	
Quarter		Production I	4	
		Situation Drawing	4	
		TOTAL		12
Spring		Graphic Design III	4	
Quarter		Production II	4	
		Art History Survey I	4	
		TOTAL		12
First Semester (Taken at four-year college)				
		English Composition I	3	
		TOTAL		3
Second Semester (Taken at four-year college)				
		English Composition II	3	
		TOTAL		3
Summer		Graphic Design IV	4	
Quarter		Special Projects I	4	
		TOTAL		8
Fall		Graphic Design V	4	
Quarter		Production III	4	
		Independent Study I	4	
		TOTAL		12
Winter		Independent Study II	4	
Quarter		Special Projects II	4	
	1886	Portfolio Preparation	4	
		Art History Survey II	4	
		TOTAL		16
Third Semester (Taken at four-year college)				
		General Education Elective	6	
		TOTAL		6
Fourth Semester (Taken at four-year college)				
		General Education Elective	3	
		TOTAL		3
Associate of Science Degree Total:				87

Commercial Art Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
Fall		Intro. to Graphic Design I	4	
Quarter	1830	Typography	4	
		Drawing for Layout & Illustration	4	
	8110	Communications	4	
		TOTAL		16
Winter		Graphic Design II	4	
Quarter		Production I	4	
		Situation Drawing	4	
	8113	Oral Communications	4	
		TOTAL		16
Spring		Graphic Design III	4	
Quarter		Production II	4	
	8212	Business Mathematics	4	
		Art History Survey I	4	
		TOTAL		16
Summer		Graphic Design IV	4	
Quarter		Special Projects I	4	
		Light and Sound	4	
	8403	Psychology of Advertising	4	
		TOTAL		16
Fall		Graphic Design V	4	
Quarter		Production III	4	
		Independent Study I	4	
	8111	Business Communications	4	
		TOTAL		16
Winter		Independent Study II	4	
Quarter		Special Projects II	4	
	1886	Portfolio Preparation	4	
		Art History Survey II	4	
		TOTAL		16
Total Associate in Applied Science Degree Credits				96

Interior Design Technology*

An Associate of Science and an Associate of Applied Science Degree program in Interior Design Technology will provide an additional educational option for the central Indiana student population through articulation with a four-year school.

Students entering the interior design program will be educated in basic skills including space planning, drawing, and selecting colors and materials. Advanced-level training will afford the student job-specific, practical experience.

"Interior designers plan, design, and furnish the interiors of private homes, public buildings, and commercial establishments like offices, restaurants and theaters. They coordinate colors; select furniture, floor coverings, and curtain materials; and design lighting and architectural detail like crown molding." (*Occupational Outlook Handbook*, 1986-87, p. 163)

Positions as interior designers may be found in design studios for small companies or a large corporation or self employment.

*Pending final approval at the time of publication of the bulletin.

Interior Design Technology
Associate of Science Degree

	COURSE #	COURSE TITLE	CREDITS	
Fall	2011	Color Theory	3	
Quarter	2021	Textiles 1	3	
	2022	Interior Design 1	3	
	2051	Display 1	3	
		TOTAL		12
Winter	2013	Structural Design 1	4	
Quarter	2031	Textiles 2	3	
	2041	Furniture Selection	3	
		TOTAL		10
Spring	2023	Structural Design 2	3	
Quarter	2032	Furniture Styles 1	3	
	2053	Furniture Arrangement & Space Planning	3	
	XXXX	Minor	3	
		TOTAL		12
First Year (Taken at four-year college)				
		English Composition 1	3	
		English Composition 2	3	
		Speech	3	
		TOTAL		9
Summer	2033	Furniture Styles 2	3	
Quarter	2044	Environmental Psychology	4	
	2052	Professional Practices	3	
	XXXX	Minor	3	
		TOTAL		13
Fall	2010	Composition and Design 1	3	
Quarter	2012	History of Art 1	3	
	XXXX	Minor	3	
	XXXX	Minor	3	
		TOTAL		12
Winter	2020	Composition and Design 2	3	
Quarter	2050	Applied Interior Design 1	4	
	XXXX	Minor	3	
	XXXX	Minor	3	
		TOTAL		13
Second Year (To be taken at four-year school)				
		Math	3	
		Psychology	3	
		General Ed. Elective	3	
		TOTAL		9
Associate of Science Degree Total:				90

Interior Design Technology
Associate in Applied Science Degree

	COURSE #	COURSE TITLE	CREDITS	
Fall	2011	Color Theory	3	
Quarter	2021	Textiles 1	3	
	2022	Interior Design 1	3	
	2051	Display 1	3	
	8110	Communications	4	
		TOTAL		16
Winter	0575	Topics in Data Processing 1	4	
Quarter	2013	Structural Design 1	4	
	2031	Textiles 2	3	
	2041	Furniture Selection	3	
		TOTAL		14
Spring	2023	Structural Design 2	3	
Quarter	2032	Furniture Styles 1	3	
	2053	Furniture Arrangement & Space Planning	3	
	8212	Business Mathematics	4	
	XXXX	Minor	3	
		TOTAL		16
Summer	2033	Furniture Styles 2	3	
Quarter	2044	Environmental Psychology	4	
	2052	Professional Practices	3	
	8113	Oral Communications	4	
	XXXX	Minor	3	
		TOTAL		17
Fall	2010	Composition and Design 1	3	
Quarter	2012	History of Art 1	3	
	8401	Human Relations	4	
	XXXX	Minor	3	
	XXXX	Minor	3	
		TOTAL		16
Winter	2020	Composition and Design 2	3	
Quarter	2050	Applied Interior Design 1	4	
	XXXX	Mathematics of Finance 1	4	
	XXXX	Minor	3	
	XXXX	Minor	3	
		TOTAL		17
Associate of Applied Science Degree Total:				96

Medical Records Technician*

The increase in paperwork related to medical records, and the importance to health agencies of complete and accurate records, have led to a demand for trained medical record technicians. In addition, in recent years the number of types of health care facilities available to the public has increased.

A medical record is a permanent record of one person's medical health and/or treatment. Each record consists of all medical reports which describe the patient's condition and progress. It is maintained and used for patient care management, quality review, financial reimbursement, legal affairs, education, research and public health. The job of the medical record technician is in the preparation, organization, and evaluation of these medical records.

The Medical Record Technician (MRT) may be employed in hospitals, medical clinics, long term care facilities, state and federal health agencies, insurance firms, health research societies, or in computer and office equipment companies as sales representatives.

The proposed Medical Record Technician program of the College in the Indianapolis Region will be two academic years, or six quarters, in length. Graduates will receive an Associate of Applied Science degree and will be eligible to take the National Accreditation examination offered by the American Medical Record Association to become an accredited Medical Record Technicians (MRT).

*Pending final approval at the time of publication of the bulletin.

Medical Records Technician
Associate of Science Degree

	COURSE #	COURSE TITLE	CREDITS	
First	3719	Medical Typewriting 1	3	
Quarter	9355	Medical Terminology	4	
	9353	Anatomy & Physiology 1	4	
	xx01	Medical Record Science 1	4	
				15
Second	1255	Introduction to Word Processing 1	4	
Quarter	8401	Human Relations	4	
	9354	Anatomy & Physiology 2	4	
	3743	Machine Transcription - Medical 1	3	
				15
Third	9356	Disease Conditions	3	
Quarter	3744	Machine Transcription - Medical 2	3	
	xx04	Coding and Classification Systems	4	
	xx05	Health Data Statistics	4	
				14
Fourth	1256	Word Processing Operations	4	
Quarter	8111	Business Communications	4	
	xx02	Medical Record Science 2	4	
	xx06	Documentation of Medical Records	4	
				16
Fifth	3732	Medical Office Communications	4	
Quarter	3771	Medical Insurance	3	
	xx03	Medical Record Science 3	4	
	xx08	Medical Record Technology - Practicum 1	4	
				15
Sixth	0913	Techniques of Supervision 1	3	
Quarter	9310	Pharmacology	4	
	xx07	Legal Aspects of Medical Records	2	
	xx09	Medical Record Technology - Practicum 2	4	
	xxxx	Directed Electives	3	
				16
Total Credits				91

Real Estate Management

An Associate of Science degree program in Real Estate Management would prepare the student for specific job opportunities in real estate and the associated professions both in Indianapolis and statewide.

Real estate is a field that includes many specialties. While the majority of real estate professionals are employed in residential and commercial brokerage, many others are employed in appraisal, mortgage and financing property management, title insurance, construction and development. This program would provide graduates with the job skills necessary to enter these specialized fields.

The State of Indiana, acting in the interest of its citizens, regulates the practice of real estate by requiring those wishing to practice certain aspects of this field to be licensed. With the exception of real estate brokerage most of the specialties have no formal educational requirements, with on-the-job training being the norm.

This program would provide the necessary training in real estate brokerage and provide the student with the necessary competencies in associated skills such as title law, financing, appraisal, and property management. This body of knowledge would complement the real estate sales and brokerage courses currently offered by Indiana Vocational Technical College as well as open up new career possibilities.

The curriculum for this program will include specialized courses such as appraisal and general electives in areas such as business math, accounting, and computer literacy.

The real estate program will benefit the citizens of the State of Indiana by providing a pool of workers who are knowledgeable and competent in the many diverse areas of the real estate profession.

The need for skilled workers in many real estate careers is on the rise. The housing market has experienced a steady upswing in recent years. Several factors have come together that should keep the demand for housing and real estate professionals strong well into the next decade.

*Pending final approval at the time of publication of the bulletin.

Real Estate Management
Associate of Science Degree

	COURSE #	COURSE TITLE	CREDITS
Fall	1140	Real Estate Sales**	4
Quarter	8110	Communications	4
	8212	Business Math	4
	XXXX	Elective	*
Winter	0575	Topics in Data Processing	4
Quarter	0323	Management Principles	4
	8111	Business Communications	4
	XXXX	Elective	*
Spring	xx01	Real Estate Finance	4
Quarter	0112	Accounting for Non-Majors	4
	8401	Human Relations	4
	XXXX	Elective	*
Summer	1152	Real Estate Brokerage**	4
Quarter	xx02	Property Management	4
	0607	Productivity Software	4
	XXXX	Elective	*
Fall	xx03	Commercial and Investment	
Quarter		Real Estate	4
	0328	Laws Applied to Business	4
	xx04	General Science	4
	XXXX	Elective	*
Winter	xx05	Real Estate Appraisal	4
Quarter	8111	Business Communications	4
	8213	Math of Finance	4
	XXXX	Elective	*

Associate of Science Degree Total:	90
Required Technical Courses	66
General Education Courses	24

*Electives may be drawn from a broad, well defined selection, including, but not limited to additional real estate management courses.

xx06	Title Theory	4
xx07	Construction Principles	4
xx08	Real Estate Law	4
8501	Field Study/Coop Ed	3-6

**Required by Indiana Real Estate Commission for licensure.

Course Descriptions

0110   Accounting Principles 1   4
Introduces fundamental principles, techniques, and tools of accounting. Explains the mechanics of accounting, including the collection, summary, analysis, and reporting of information pertaining to a service enterprise. Includes study of bank accounts and cash funds, and payroll accounting.

0112   Accounting for Non-Majors   4
Analyzes financial statements to determine levels of efficiency and company performance. Instructs in ratio and trend analysis, budgeting, capital expenditures, and price level effects on accounting.

0120   Accounting Principles 2   4
Studies special journals; includes work sheets and financial statements for a merchandising business internal control, notes and interest, sales procedures, inventories and fixed assets. Computerized practice set is included in course. Prerequisite 0110.

0122   Business Law 1   3
Studies the judicial system and the nature and sources of business law. Describes the nature of torts and crimes for which the law provides punishment with emphasis on legal situation encountered in the performance of breach of contracts, in the creation of an agency, and in sales and negotiable instruments.

0130   Accounting Principles 3   4
Develops accounting skills in journal and statement presentation of corporated capital stock, receivables, intangible assets, deferred charges, long-term liabilities, and temporary and long-term investments, introduces branch operations accounting. Prerequisite 0120.

0136   Accounting for Government and Non-profit Entities   3
Introduces principles of fund accounting and various types of funds in terms of categories and groups of accounts. There is less emphasis on profit motives and more on achieving major goals in connection with legal implications and budgetary constraints.

0140   Intermediate Accounting 1   4
Studies accounting principles pertaining to the income statement and balance sheet, cash receipts, disbursements and reconciliations, accounts receivable, and bad debts. Prerequisite 0110, 0120, 0130.

0141   Individual Income Taxes   4
Presents accounting procedures and problems associated with state and federal income tax laws pertaining to individuals, estates, and trusts.

0142   Job Order Cost Accounting   4
Studies job order cost accounting procedures, manufacturing overhead control, departmentalization, material and labor control, and report forms.

0143   Business Law 2   3
Includes study of bailments, secured transactions, partnerships and corporations, property, wills and trusts, insurance, suretyship, guaranty, and bankruptcy.

0150   Intermediate Accounting 2   4
Provides intermediate and advanced study of accounting principles pertaining to corporations, temporary investments, long-term investments, special bond transactions, amortization, revaluation and retirement of plant and equipment, repairs and maintenance, depreciation, natural resources, intangible assets, and inventory valuation. Prerequisite 0140.

0151   Process Cost Accounting   4
Studies process cost accounting, standard cost procedures, and estimation and control of costs by means of budget use and profit analysis.

0160   Intermediate Accounting 3   4
Covers accounting practices pertaining to stockholders' equity, corporate earnings, corporate dividends, statement of change in financial position, and financial statement analysis. Prerequisite 0150.

0320   Management Principles   4
The foundation management course with focus on the basic functions and activities common to management work. Guidelines for effective management are studied.

0321   Office Administration   4
Focuses on the activities of the office manager, including office organization, office site location, office layout and environment, records management, and office communication devices and services.

0322   Personnel Administration   4
Focuses on the activities of the personnel administrator, including personnel recruitment and placement, personnel appraisal and training, job analysis and classification, wage and salary administration, and employer-employee relations.

0323   Business Principles and Organization   4
Examines our business system in relation to our economic society. Studies business ownership, organization principles and problems, management, control facilities, administration, and development practices of American business enterprises.

0328   Laws Applied to Business   4
A survey course designed to acquaint Business and Management students with significant areas of the law which directly or indirectly impinge on the business environment.

0510   Data Processing Fundamentals   5
Provides general introduction to data processing and programming, with emphasis on hands-on computer experience. This course will examine the role of data processing in an organization which includes: data processing applications, computer hardware and software, internal data representation, stored program concepts, systems and programming design, flowcharting, and data communication. Additional topics include the history of computers, related computer careers, the social impact of computers, and computer security.

0512   BASIC Language Programming   5
Introduces BASIC, a computational, problem-oriented language. Covers use of arithmetical expressions, conditional control, iteration techniques, input-output specifications, tables, and sub-programs for solving elementary business problems.

0520   COBOL Programming Fundamentals   5
Provides an introduction to COBOL (Common Business Oriented Language) with the major emphasis on developing structured programming skills. Develops proficiency in applying the programming development cycle to elementary business problems.

0521   Practical Computer Operations   5
Introduces students to computer operations, hardware, media, operating systems, and DOS Job Control Language. Concepts are reinforced by actual hands-on computer room experience.

0522   Problem-Solving Fundamentals   3
Emphasizes efficient problem solving techniques as they apply to business related computer programming problems. Develops ability and confidence through flowcharting examples and exercises.

0530   Advanced COBOL Programming   5
Continues those topics introduced in Introduction to COBOL with more logically complex business problems. The student develops a higher level of COBOL proficiency as well as a greater familiarity with debugging techniques and the structured approach through class instruction and laboratory experience.

0531   Operating Systems   5
A study of computer operating systems, purposes, structure and various functions. Provides general understanding of how comprehensive sets of language translators and service programs, operating under supervisory coordination of an integrated control program, form the total operating system of a computer.

0540   Systems Analysis and Design   4
Provides instruction for creating or modifying a system by gathering details, analyzing the data, designing the system by creating solutions, and implementing and maintaining the system.

0541   COBOL Programming 3   5
Emphasizes file handling techniques on both tape and direct access devices and the use of libraries via the COBOL CALL and COPY verbs. Although top-down construction, modularization, the GO TO-less programming are stressed throughout all COBOL classes, variant forms of the "structured" approach as well as unstructured concepts such as the GO TO verb are introduced at this level. Through class discussion and lab assignments, the course helps the student develop good programming practices and an entry-level COBOL competency.

0560   Data Communications   4
This course introduces the concepts of data communications for computer programming students in order to build a foundation of knowledge upon which to add the new technologies as they are developed.

0567   Introduction to Database Management   4
Introduces microcomputer database concepts, planning, design, and reporting through database management systems. Students will learn to use such software programs as dBASE III Plus in applying the database techniques to business information storage and reporting. Prerequisite 0607 or permission of Program Chair.

0575   Topics in Data Processing 1   4
Discusses topics of current interest in information/data processing as to the use of microcomputers in business. Introduces microcomputer history, terminology, fundamental equipment operations and disk storage as well as standard microcomputer software applications such as word processing, database management, and electronic spreadsheets. Students will apply such concepts during lab exercises using software included with the text.

**0576   Advanced Assembly Language for
            Mainframe Computers   5**
Continues those topics introduced in Assembly Language Fundamentals with emphasis placed on disk programming techniques.

0601   Office Automation   3
Introduces student to the integration and automation of all information functions in the office. Emphasizes interpretation of several forms of computerized information processing including data processing, word processing, electronic mail, and graphics, with insight as to how automation of business operation affects the office worker.

0603   Micro/Minicomputer Operating Systems   4
Introduces concepts, terms and operation skills for microcomputer and minicomputer operating systems. Acquaints the student with the method of control provided by the operating system of a computer to supervise, coordinate and integrate programs. Student will learn to use such operating systems as UNIX and PC-DOS. Prerequisite 0601 or permission of Program Chair.

0605   Microcomputer Database Design and Management   4
A continuation of 0567. Designed to provide an in-depth focus and application of advanced Database Management techniques. Student will learn to use the advanced features of such software programs as dBASE III Plus to apply database concepts. Prerequisite 0567 or permission of Program Chair.

0607   Productivity Software Applications   4
An introduction to microcomputer software applications. Acquaints the student with the fundamentals of microcomputer workstations, terminology, and standard productivity software on microcomputer systems. Student will learn to use such software programs as dBase III plus, TWIN, and WordPerfect to demonstrate business applications for microcomputer software. Prerequisite 0575 or permission of Program Chair.

0608   Microcomputer Word Processing   4
An introduction to microcomputer word processing. Acquaints the student with the fundamentals of word processing on micro workstations. Student will learn to use such software programs as Wordstar and Multimate in performing word processing tasks. Prerequisite 0610 or permission of Program Chair.

0609   Electronic Spreadsheets   4
An introduction to electronic spreadsheet application programs. Emphasis placed on how to automate the use of ledger worksheets for better financial planning and analysis. Some graphic representation of data is included. Students will learn to use such software programs as Microsoft Multiplan and Lotus 1-2-3 to prepare financial reports and solve business problems. Prerequisite 0607 and 8212 or permission of Program Chair.

0610   Introduction to Microcomputers   3
Discusses topics of current interest in information/data processing as related to the use of microcomputers in business. Introduces microcomputer history, terminology, fundamental equipment operation and disk storage as well as standard microcomputer software applications such as word processing, database management, and electronic spreadsheets. Students will apply such concepts during lab exercises using software included in the text.

0613   Integrated Business Software   4
Provides a working knowledge of integrated micro software concepts, interrelation, commands, and practical application. Integrated software uses individual applications that can share the same data, manipulating it in different ways. A continuation of 0609, the course provides an in-depth focus and application of advanced spreadsheet commands including special calculation functions, use of tables and macro design/execution. Students will learn to use the advance features of such programs as Lotus 1-2-3 to apply integrated software concepts. Prerequisite 0609 or permission of Program Chair.

0619   C Programming Language   4
Introduces "C" — a microcomputing programming language. In working within the UNIX operating system, the course emphasizes arithmetic expressions, conditional control, iteration techniques, input/output specification, table and sub-programming techniques. Prerequisites 0603 and 0512 or permission of Program Chair.

0711 Hospitality Management 4
Analyses management's functions and responsibilities in such areas as administration, organization, communication, accounting, marketing and human relations.

0712 Front Office Procedures 4
This course presents a systematic approach to front office procedures by detailing the flow of business through a hotel beginning with the reservation process and ending with billing and collection procedures. The course also places front office procedures within the context of the overall operation of a hotel and examines front office management, the process of handling complaints, and concerns regarding hotel safety and security.

0723 Convention Management 3
Defines the scope and various segments of the convention market, explains what is required to meet individual needs, and, most importantly, explores methods and techniques that lead to better service.

0728 Hotel-Motel Seminar 3
Seminar topics are selected to meet special training needs of local hotel-motel conditions and events. For example, seminar topics may be presented to orient graduates to community events, public health conditions, or computerized skills for newly developing hotel-motel systems.

0731 Basic Cooking Methods I 4
Explains and demonstrates the fourteen basic forms of food preparation.

0733 Food and Beverage Management and Service 4
Provides a basic understanding of the principles of food production and service management; reviews sanitation, menu planning, purchasing, storage, and beverage management.

0742 Food and Beverage Purchasing and Control 4
Studies the major food groups purchased by quantity buyers. Includes fresh and processed fruits and vegetables, dairy products, cereals and cereal products, beverages, poultry and eggs, fish and shellfish, meats, and alcoholic beverages. Outlines the essentials of effective food and beverage control and establishes systems for determining sale values.

0744 Sanitation 4
Studies in detail the principles and practices of sanitation for food service operations. Includes general cleaning practices, environmental sanitation, and the scientific principles underlying good sanitation practices. Attention is given also to personal hygiene and the importance of sanitation from both economic and legal points of view.

0751 Food and Beverage Cost Control,
Planning and Procedures 4
Studies in detail the various areas of control in a food and beverage operation. Items covered include points of control, people planning and procedures for stabilizing controls and monitoring controls once in place.

0752 Sales Promotion 4
Demonstrates the development of a marketing plan for any size operation. Shows how to unite all departments of a hotel operating into a coordinated team. Emphasizes the organization and functioning of the sales department, with attention to sales tools and techniques, advertising, and types of markets.

0753 Hotel-Motel Law 3
Creates an awareness of responsibilities and rights which the law imposes upon and grants to the innkeeper and illustrates the consequences caused by a failure in those responsibilities; also discusses attitude of the courts toward the innkeeper involved in litigation.

0760 Hotel Engineering Systems 3
Presents information and principles important to both the managerial and technical functioning of the engineering/maintenance department, stressing the knowledge needed by managers at all levels in order of title to make appropriate and cost-effective decisions.

0762 Hotel Supervisory Housekeeping 4
Provides an overview of the fundamentals of housekeeping management. This course describes the management function, tools, and practices required in today's lodging and institutional housekeeping departments.

0763 Hotel Maintenance I-Security Management 3
Explains the issues surrounding the need of individualized security program, examines a wide variety of security and safety equipment and procedures, discusses guest protection and internal security for asset protection, and outlines OSHA regulations that apply to lodging properties.

0901 Quality Control Concepts and Techniques 1 4
Studies the latest quality control concepts and techniques in industry, with emphasis on modern manufacturing requirements.

0902 Quality Control Concepts and Techniques 2 4
Emphasizes recent technological developments; a continuation of 0901 Quality Control Concepts and Techniques 1.

0903 Quality Control Engineering Principles
and Techniques 4
Presents principles and techniques of modern quality control engineering, with attention to management, engineering, economic, and production factors. Emphasis placed on the assurance of quality at the hardware, processing, and systems levels.

0904 Statistical Concepts and Techniques 4
Presents various topics pertaining to statistical applications of quality control, including frequency distribution, probability theory and applications, and sampling techniques.

0905 Quality Control Engineering Theory and Application 4
Presents current theory and applications of quality engineering for assurance and verification of product quality at the hardware, processing, and system levels. Emphasis is placed on statistical analysis, laboratory experiments, and test and case problem-solving applications.

0907 Reliability Objectives 4
Introduces the development and principles of reliability engineering. Establishes the mathematical and physical bases of reliability and applies the basic elements of reliability data analysis. Surveys concepts basic to modern reliability requirements, with emphasis on practical applications in manufacturing processes and production operations.

0908 Nondestructive Tests 4
Presents an overview of the relationship of nondestructive testing to the total quality function. Attention is given to the advantages and limitations of various test methods.

0909 Mechanical Metrology 4
Provides instruction and laboratory experiments in the use of mechanical testing and measurement equipment for quality control.

0913 Techniques of Supervision 1 3
Studies employee development, with emphasis upon the responsibilities of the beginning or newly appointed supervisor. Gives attention to functioning within the organizational structure, communications, motivation, delegation of authority, interviews, orientation and induction of new employees, and evaluation of employee performance.

0915 Electrical Metrology 4
Offers instruction and laboratory experiments in the use of electrical testing and measurement equipment for quality control.

0916 Procurement Quality Control 4
Studies principles and functions of procurement quality control. Covers inspection techniques, tools, and records.

0917 Reliability Techniques 4
Studies reliability techniques and applications designed to obtain or improve reliability analysis.

0923 Techniques of Supervision 2 3
Develops the necessary skills for effective supervision of personnel. Includes group discussion of selected topics, case studies, and in-basket situations.

0930 General Industry OSHA and First Aid 3
Studies the Occupational Health and Safety Act (OSHA) and standards. Alerts the student to industrial hazards and demonstrates first aid techniques as outlined in the American Red Cross multimedia course.

0942 Purchasing and Inventory Control 4
Studies purchasing procedures and inventory management.

0965 Business Management/Manufacturing 4
The introductory manufacturing course. Focus is on basic principles, practices, and functions of manufacturing management. Includes application in the service industries, such as utilities, hospitals, and government.

0967 Drafting and Manufacturing Standards 3
Presents drafting theory and practice, with special attention to standard practices of dimensioning, tolerancing, and notations of tooling components. Covers revolving out of position, line elimination, and sectioning.

1001 Distribution and Logistics 4
The foundation course for the study of the physical distribution of materials. Reviews the basic physical distribution and logistics systems relating to warehousing, materials handling, inventory control, order processing, and transportation.

1002 Manufacturing and Logistics 4
This course concentrates on the flow of raw materials from source of supply to the production line, the materials in-process handling, and the movement of finished goods from end of the production line to shipment.

1003 The Transportation System 4
Traffic and transportation management applied to rate negotiation, routing, risk and claims, expediting and tracing. Distinguishes among types of transportation operations, including rail, motor, water, air, and pipelines.

1004 Warehouse and Inventory Control 4
Evaluates the warehousing function and management system controls. Differentiates among the various inventory control systems. Reviews material handling methods for the preparation, placing, and positioning of materials to facilitate their movement or storage. Focus is placed on computer utilization in warehousing and inventory control management.

1006 Case Studies 4
This course is designed to apply, by the case study method, the knowledge, principles and skills acquired in ones own program concentration (e.g., small business, manufacturing, marketing, physical distribution). The course primarily is structured as a seminar for individualized case analysis, presentation, discussion, and solution.

1112 Introduction to Business 4
The foundation course for business and management career preparation. Provides a comprehensive overview of business operations, management functions, and business concerns.

1115 Sales Techniques 4
This course is designed to develop one's own art of selling. Sales knowledge and sales skills are applied to one's own choice of product. Selling principles are emphasized.

1135 Retailing 4
Studies retailing concepts and practices, including retail merchandise planning, buying, pricing, promotion, and control in established retail operations. Attention is given to managerial and operational skills.

1137 Buying and Inventory Control 4
Focuses on decision-making and the skills required in the purchasing of products and services for business. Attention is given to procurement, negotiation, transportation, and inventory management.

1147 Principles of Advertising 4
Focuses on advertising as the key element in the promotion of goods and services in the market place. Attention is given to advertising media and media selection, advertising copy strategy, advertising regulations, and organization of advertising functions.

1148 Principles of Insurance 4
Examines risks faced by business firms and considers ways of handling them. Covers property, liability, and personal losses, with attention to insurance contracts and their uses. Includes individual life, health, and pension insurance, public policy, government regulations, and social insurance programs.

1151 Introduction to Public Relations 4
Introduces the public relations field, including the role of public relations in business and industry, nonprofit organizations, the benefits of public relations, the tools of the public relations practitioner, and principles and trends of the field.

1157 Entrepreneurship 4
This course is designed to develop one's own business plan for entry into self-employment. Coverage also is applicable for the generalist small business administrator. The course primarily is structured as a workshop for individualized business plan development.

1161 Business Management/Marketing 4
The introductory marketing course. Focus is on basic marketing strategy for targeting markets and for developing a marketing mix of product, price, distribution, and promotion.

1208 Refresher Shorthand 2
Designed to bring unused shorthand skills to an employable level. The course includes three areas of skill development: speed, theory, and transcription.

1209 Refresher Typing 2
Designed for typists who have mastered keyboarding skills. Emphasis is placed on identifying causes of low typing speed and accuracy. Prescribed typing drills are assigned to strengthen diagnosed weakness.

1210 Shorthand 1 4
Introduces symbol shorthand, including theory, brief forms, and speed in reading from plate or machine notes. Introduces dictation, with emphasis on writing shorthand outlines.

1212   Typewriting 1   4
Studies touch typewriting techniques and their applications. Includes typing of business letters and manuscripts, centering, tabulation, machine parts and care, and speed development.

1220   Shorthand 2   4
Develops dictation, note-reading, and transcription skills through drills and tests. Emphasizes speed, accuracy, and use of correct English.

1222   Typewriting 2   4
Focuses on business letters, forms, manuscripts, and tabulations. Builds speed and accuracy, and use of correct English.

1224   Records Management   3
Introduces methods and procedures of maintaining business records of various types, with attention to filing systems and file maintenance. Develops skills through practice situations.

1226   Data Entry   4
Prepares the student for employment in data entry or related data processing positions in a modern computerized business. The course teaches basic keyboarding skills in addition to providing experience with typical applications and a variety of data entry techniques on an IBM Personal Computer. Speed and accuracy are strongly stressed. Prerequisite 1212 or equivalent.

1230   Shorthand 3   4
Reviews fundamental shorthand skills, emphasizing new matter dictation and mailable transcription. Emphasizes use of correct English.

1232   Typing 3   4
Improves production typing skills. Includes complex tabulation, statistical reports, rough drafts, manuscripts, and forms.

1236   Office Calculating Machines   3
Gives the student a competent touch skill level in entering numbers in applications of related mathematical problems and the basic operation of electronic calculating machines representative of those used in business offices. Prerequisite 8212.

1241   Clerical Office Procedures   4
Explores the range of opportunities available in the clerical field. Includes filing, machine transcription, and duplicating machine techniques and receptionist training. Also introduces the duties of legal, medical, and administrative secretaries.

1242   Typewriting 4   4
Develops a high level of typing skills. Emphasizes complex tabulation, statistical reports, rough drafts, manuscripts, and forms.

1255   Word Processing (Part 1)   2
This lecture course enables students to become knowledgeable in the concepts of word processing systems, their history, and their future. Co-requisite is 1256.

1254   Word Processing Concepts   2
Provides the student with a working knowledge of how dedicated word processing tasks are performed on a microcomputer. Students will learn to create, edit, alter text formats, and print documents including memoranda, letters, reports and mass mailings using such software programs as IBM DisplayWrite 3 or 4.

1255   Introduction to Word Processing Module 2   2
Provides the student with a working knowledge of how dedicated word processing tasks are performed on a microcomputer. Students will learn to create, edit, alter text formats, and print documents including memoranda, letters, reports and mass mailings using IBM Display Write Software.

1256   Word Processing Operations   4
Provides practical training on word processing operations toward solving problems and developing projects. Co-requisite is 1255.

1257   Word Processing Applications   4
Offers experience in applying word processing equipment. Emphasis is placed on English grammar principles and proofreading skills.

1262   Typewriting 5   4
Focuses on production techniques pertaining to correspondence, business forms, manuscripts, tabulation, secretarial projects, and transcription of machine-recorded dictation. Emphasis is placed on grammar, spelling, and letter format.

1267   Machine Dictation and Transcription   2
Develops transcription and communication skills, integrating those learned in other areas, such as typing and technical and business communications. Broadens the student's marketable skills with training in the use of machine transcription equipment.

1274   Supervision of Word Processing Operations   4
Studies the management and supervision of a word processing system. Demonstrates starting and stopping the system components, care of the printer, archiving and deleting documents to avoid system overload, use and maintenance of production logs, performance of control operation tasks, and supervising the work of other operators in the office.

1275   Word Processing Files Management   4
Demonstrates how to create, use, change, and update files on the IBM 5520 Administrative Word Processor or equivalent system.

1302   Legal Research/Writing   4
Legal Research and Writing includes the study and use of legal research tools such as digests, loose leaf services, reporters, statutory compilations and forms books. Legal writing format and methodology will be presented through practical application in drafting memoranda, correspondence and selected forms. Shepherdizing and proper case citation skills are emphasized. 8110 Communication is a prerequisite.

1303   Civil Law and Procedures   4
Civil Law and Procedures includes the study of the Indiana Trial Rules and miscellaneous local rules: Filing requirements, computation of time and form drafting are emphasized.

1305   Family Law   4
Family Law includes a survey of the law of dissolution, custody, child support and visitation, marriage and adoption. Financial declaration forms, client intake, Marion County Child Support Guidelines, and available social services are presented as practical information.

1306   Criminal Law and Procedures   4
Criminal Law and Procedures includes a survey of Indiana criminal statutes and selected federal criminal laws. Investigative and administrative skills are emphasized.

1307   Wills, Trusts and Probate   4
Wills, Trusts and Probate includes a survey of estate planning, will drafting, adoption and guardianship procedures and the law underlying these proceedings. Preparation of probate and administration forms, asset inventories and valuations, certain tax forms and accounting are presented.

1308   Propeprty Law   4
Property Law includes a survey of the law of real and personal property. Practical exposure includes review of title searches, loan documents, zoning requirements, bills of sale, financial statements, mortgage documents, leases, and deeds.

1309 Torts 4
Torts includes a survey of the law of comparative negligence, products liability, defamation, false arrest, and other civil wrongs, including knowledge of the elements of such causes.

1314 Bankruptcy Law 4
Bankruptcy Law includes a survey of the Federal Bankruptcy Act. Skills necessary to accumulate personal financial information, compile initial schedules, collect and organize data for first meeting of creditors, complete proofs of claim, and pursue certain creditor's rights are stressed.

1316 Litigation 4
Litigation includes the study of the Indiana Rules pertaining to actual trial. The discovery process and its tools are reviewed. Skills such as document organization and retrieval, witness statementizing, deposition summarizing, indexing and scheduling are presented. Trial notebook preparation is surveyed. 1303 Civil Procedure is a prerequisite.

1318 Contracts and Commercial Law 4
Contracts and Commercial Law includes a survey of contract law and the Environmental Commercial Code. Special statutes regarding state unfair trade practices, consumer deception and consumer rights are also presented.

1319 Claims Investigations 4
Claims investigation includes the study of witness interview techniques, preservation of evidence, organizational skills, and alternative methods of gathering facts. Professional client intake and communication skills are emphasized.

13XX Business Associations 4
Business Associations includes the study of various business structures and the formalities required for such structures. A survey of partnership, agency and corporation law is included.

13XX Office Management and Ethics 4
Office Management and Ethics includes instruction on automated and manual docket and conflict control system, file organization, closed file control, research segregation, client funds handling and management tasks. Internal communication skills and compliance with the Rules of Professional Conduct are stressed.

13XX Appellate Procedure 4
Appellate Procedure includes an in-depth study of the Indiana Rules of Appellate Procedure, with concentration on the mechanical aspects of preparation and filing of the record on appeal, and the format required of the briefs submitted. 1303 Civil Procedure and 1306 Criminal Law and Procedure are prerequisites.

13XX Computers in the Law Office 4
Computers in the Law Office includes survey of software support available to the law practitioner, such as litigation support and estate planning support. Also included is instruction in the availability and use of research databases such as Dialog, Nexis, Lexis and Westlaw. 1302 Legal Research and Writing and 0610 Introduction to Microcomputers are prerequisites.

13XX Evidence and Federal Procedure 4
Evidence and Federal Procedure includes a review of the Federal Rules of Civil Procedure and the differences between the Federal Rules and the Indiana Trial Rules. The Federal Rules of Evidence are presented and discussed as a basis for preparation of evidentiary portions of a trial notebook.

2610 Child Growth and Development 4
Introductory study of the physical, social, emotional and mental development of the preschool child. The influence of cultural environment on development and individual differences are considered.

2612 Childhood Health 3
Instruction in basic health and illnesses pertaining to early childhood.

2641 Childhood Movements 4

2642 Nutrition and Meal Planning 4
Focuses on the nutritional needs of preschool children and the state regulations for food and nutrition in child care centers. Demonstrates ways to promote nutritional values in preschool children.

2643 Preschool Art 4
Presents the methods, techniques, and materials used in art experiences for young children.

2651 Language Arts for Children 4
Presents methods and techniques useful in the development of language skills in preschool children.

2652 Children's Literature 1 3

2660 Preschool Music 4
Instruction in theory and the planning of musical activities for preschool children. Includes use of songs, records, and simple instruments for group activities.

2661 Management Techniques 4
Introduces the principles of managing a child care agency. Emphasizes the role of the manager in relation to agency personnel. Staff interpersonal relationships and funding sources are also discussed. Resume writing and job-seeking skills are stressed.

2761 Interdisciplinary Team 4
This course will explore reasons which support the need to work as an interdisciplinary team, the various departments which may compose the team, and the services each department provides.

3410 Buffet Catering 2
Studies cold food preparation and presentation techniques, including charcuterir, specialty canapes, hors d'oeuvres, pates, mousses, cold sauces, vegetable carving, food decoration. Also covers food materials utilization, buffet planning, layout, equipment, zoning and services.

3411 Introduction to Culinary Arts 2
A knowledge of basic cooking methods is essential for the correct preparation of foods which will ensure optimal quality in terms of flavor, color, appearance, and nutritional value. This course is intended to introduce you to the basic methods and procedures of food preparation.

3413 Introduction to Foods 2
Presents the background of various food products, the contributions of leading culinarians, types of food service establishments and their organizational structures, and future trends in the food service industry. Also provides knowledge on the various herbs and spices used in food preparation.

3415 Introduction to Baking 3
Introduces the science and technology of baking, with emphasis on ingredients and preparation. Special emphasis is placed on cookies, quick breads, cakes, and pies. Conversions, measuring and mixing procedures will also be studied. Please note - this course is the preliminary course to 3436 and 3467.

3416 Culinary Theory and Skills Development 3
This course will concentrate on the four major stocks and soups and sauces that are derived from them. Time will be given to help develop the necessary skills to prepare food using any one of the fourteen major cooking methods.

3417 Pantry & Breakfast Cookery 2
This course covers the techniques and skills needed in breakfast cookery, as well as insight to the pantry department. Various methods of preparation of eggs, pancakes, waffles, and cereals will be discussed. You will receive knowledge and experience in salad prep, salad dressings, hot and cold sandwich prep, garnishes and appetizers.

3419 Culinary Externship 1 3
Offers practical work experience in a commercial food establishment in order to build specialized skills. Externship I will look at basic food prep skills equal to that of a Prep. cook. An externship agreement must be completed by the student, the establishment, and the externship coordinator, prior to the start of the course. Students should have an externship site in mind prior to registering for this course (coordinator can assist).

3421 Nutrition 3
Explores the relationship of food and nutrition to optimal physical fitness. Studies the individual daily needs for protein, vitamins and minerals and the food sources that supply them.

3425 Introduction to Table Service 2
Introduces dining room service and supervision, including equipment, personnel, responsibilities, organization, customer relations, and table service. Students must actually perform a variety of table service styles to complete this course.

3426 Purchasing, Storeroom Procedures, & Stewarding 2
Studies in detail major groups of food purchased by quantity buyers; including fresh fruits and vegetables, dairy products, meats and seafood, processed products, beverages, and non-food items. Outlines the essentials of effective F&B control, while establishing systems for sale values for food and beverages.

3427 Institutional Foodservice 2
This course will introduce you to the variety of institutional foodservice facilities. The course will also include converting recipes for quantity food production, calculating per portion cost, and determining profitable selling prices.

3428 Intermediate Hot Food Preparation 2
Course will test the student on basic cooking skills. Emphasis will be placed on appropriate cooking, holding and serving of hot food dishes.

3429 Culinary Externship II 3
Offers practical work experience in a commercial food establishment in order to build specialized skills. Externship II will look at cooking skills equal to that of a Line cook. An externship agreement must be completed by the student, the establishment, and the externship coordinator, prior to the start of the course. Students should have an externship site in mind prior to registering for this course (coordinator can assist).

3430 Meat Cutting 3
In this course the student will begin the study of meat cutting. The student will gain knowledge in the breakdown of beef, pork, poultry, lamb, and veal.

3436 Advance Baking/Introduction to Classical Pastry 3
Provides further study in the science and technology of baking, with emphasis on yeast products, and cake decorating. Please note - this course is the preliminary course to 3467.

3439 Culinary Externship 3 3
Offers practical work experience in a commercial food establishment in order to build specialized skills. Externship III will look at cooking and management skills. An externship agreement must be completed by the student, the establishment, and the externship coordinator, prior to the start of the course. Students should have an externship site in mind prior to registering for this course (coordinator can assist).

3440 International Food Preparation 3
In this course you will be introduced to foods from around the world. You will gain a background in the history of foods from various countries as well as developing skills in preparation of these foods.

3442 Buffet Catering 2
Studies hot and cold food preparation and presentation techniques, including specialty canapes, hors d'oeuvres, etc. Also covers food materials utilization, buffet planning, layout, equipment, zoning and services.

3444 Introduction to Food Service 3
A knowledge of basic cooking methods is essential for the correct preparation of foods which will ensure optimal quality in terms of flavor, color, appearance, and nutritional value. This course is intended to introduce you to the basic methods and procedures of food preparation, as well as the history and overall operation of a restaurant.

3455 Menu Design 4
Class will cover menu planning that will meet the requirements of various types of food service operations. This class will include layout and design, pricing, and various types of menus. Menus as a marketing tool will also be discussed.

3459 Classical Cuisine & Banquet Organization 3
Presents advanced and sophisticated classical culinary methods following the principles and techniques of Escoffier. Studies cooking techniques, timing, presentation, history and terms relevant to classical foods and menus, with emphasis on French cuisine. Offers practical experience in table service operation, emphasizing kitchen coordination and timing. Covers legal consideration, sales planning, menu layout, floor plans, ceremonial functions (weddings, etc.) and off and on-premise catering. Attention is given also to kosher catering.

3461 A la Carte Food Preparation and
      Advanced Table Service 3
Includes study and preparation of individually listed menu items. Course will also cover techniques of French service. Students will follow the traditional European brigade systems.

3462 Advanced Food Preparation and Banquet Service 3
Offers advanced study of haute cuisine preparation and service. Includes buffet presentations as a course project.

3467 Classical Pastries 3
This course involves the study of classical pastry. What constitutes classical, why is a pastry considered classical, and how it becomes classical? How do these desserts relate to modern baking methods in hotels, retails, or commercial production methods?

Names and terminology of desserts prepared and discussed are to familiarize the student to the classic French, Italian and European. This course also includes the preparation of desserts (hot and cold). The making and baking of speciality goods such as puff pastry, specialty cookies: ganache, parlimosa creams and fillings; and specialty sauces. Emphasis is placed on size, consistency, presentation, eye appeal and taste of pastries produced.

3470 Fish & Seafood 3
Course discusses the importance of fish and seafood in today's market. Discussions include: types and categories of American and imported fish and shell fish, proper buying, storage, preparation, and merchandising of fish and seafood. Student will gain experience in boning, cutting, and various methods cooking that are appropriate to aquatic life.

3471 Garde-Manger 3
Studies Garde Manger techniques, including ice and tallow sculpturing, with emphasis on manipulation of tools. Student will also create buffet show pieces, both edible and non-edible displays.

3474   FirstAid/Sanitation   2
Studies in detail the principles and practices of sanitation for foodservice operations. Includes general cleaning practices, environmental sanitation, and the scientific principles underlying good sanitation practices. Attention is also given to personal hygiene and the importance of sanitation from both moral and legal points of view.

3712   Medical Office Procedures — Clinical 1   4
Enables the student to prepare patients for routine examinations in a physician's office. Demonstrates how to assist with physical examinations, take and record vital signs, maintain and prepare sterile equipment, and order supplies.

3713   Medical Office Bookkeeping   4
Introduces double entry principles of bookkeeping with emphasis on the needs of the medical office.

3719   Medical Typewriting   3
Focuses on typewriting skills for the medical field, with emphasis on medical forms, articles, case histories, and correspondence. Includes study of medical terminology. Prerequisite Typing I.

3721   Medical Office Procedures — Administrative   4
Covers secretarial, receptionist, housekeeping, and managerial duties and responsibilities pertaining to medical offices and health care agencies. Includes records management; processing of mail scheduling and telephoning; inventory procedures; and financial administration.

3722   Medical Typewriting 1   3
Develops skills in production typing of letters, forms, manuscripts, and tabulations. Emphasis is placed on building speed in typing medical letters and case histories, utilizing medical terms.

3723   Medical Typewriting 2   2
Emphasizes the development of speed and accuracy.

3724   Electrodardiogram - Basic
Provides opportunity to learn the fundamentals of EKG technique and interpretation of common arrythmias. Student will learn how to perform 12 lead EKG.

3729   Medical Assistant Clinical Externship   4
Provides opportunities to perform clinical procedures under supervision in selected physicians' offices, clinics, and hospitals. Includes weekly seminars to discuss students' learning experiences and situations.

3730   Medical Assistant Laboratory Techniques   4
Instructs students in the performance of lab procedures, including the preparation of patients and the collection and preparation of specimens. Familiarizes the student with test purposes, results, and norms.

3732   Medical Office Communications   4
Develops communications skills required in the medical office. Emphasis is placed on human relations.

3742   Medical Office Procedures — Clinical 2   6
Provides further instruction in the preparation of patients for routine examinations in a physician's office. Includes assistance with physical examinations, taking and recording vital signs, maintenance and preparation of sterile equipment, and ordering supplies. Attention given also to principles of nutrition.

3743   Machine Transcription — Medical 1   3
Presents fundamentals of medical dictation and machine transcription. Includes typing of medical reports, study of medical terms, and practice in medical correspondence.

3744   Machine Transcription — Medical 2   3
Presents fundamentals of medical dictation and machine transcription. Includes typing of medical reports, study of medical terms, and practice in medical correspondence.

3752   Medical Office Procedures — Clinical 3   6
Emphasizes advanced principles and techniques pertaining to patient contact. Includes diagnostic procedures, mathematics for office practice and pharmacology, care of stock medications, drug samples, and instruments. Instructs also in therapeutic diets.

3761   Community Health   2
Studies health service in the community. Discussing the institutional components of health care systems, preventive services, and financing of health care and manpower. Explores the issues of quality environment, including pollution control, and public policy with regard to research planning and health problems.

3763   Medical Office Management   3
Trains the student in the organization and management of a physician's office. Offers study of government health insurance coverage.

3766   First Aid and Emergency Care   3
Trains the student to recognize emergency situations, to take an appropriate course of action, and to apply first aid.

3769   Medical Assistant Administrative Externship   4
Offers supervised work experience in the performance of various administrative procedures.

3771   Medical Insurance   3
Presents an overview of medical insurance programs. Develops skills in handling medical insurance forms and reports.

4005   Motivation and Learning   4
Introduces the participant to the field of behavior management in various settings. Explores motivational techniques appropriate for each age group using a systematic approach.

4006   Families in American Culture   3
The impact of change on the role and function of the modern family, the nature of the socialization process, and socio-economic, cultural and ethnic factors that nurture or inhibit the family's capacity to function are areas of study included in this course.

4010   Human Services 1   4
Explores the history, philosophy and development of human services. It looks at the roles and functions performed by human service generalists as well as examining the attitudes and objectives they strive to attain.

4020   Human Services 2   4
Focuses on intervention techniques in the human service field, primarily in the context of working for changes within systems. It includes information on program planning, understanding systems, and potential legal issues.

4022   Substance Abuse in Our Society   4
Provides basic information about alcohol and drugs as well as the various laws which pertain to them. It also explores current attitudes and practices which pertain to alcohol and drug use, misuse and dependence.

4023   Problems of Alcohol and Drug Addiction   4
Explores the effects of alcohol and other drugs on the individual & families. It will focus on the pharmacological, psychological, & emotional effects of alcohol & other drugs as well as the substance abusing behavior of various population subgroups.

4024 Treatment Models 4
Describes the various treatment models used by chemically dependent clients.

4026 Counseling with Substance Abuse 4
Explores practice strategies for the worker who counsels chemically dependent clients.

4032 Helping Relationship Techniques 4
This course will focus upon the development of the helping relationship inclusive of the basic values and training involved in the area of human services. The importance of the use of good communication skills is emphasized. This course will describe the helping process in terms of skills, helping stages and issues involved in a helping relationship. It will provide an introduction to major theories of helping and specific strategies used by these theories.

4034 Interviewing and Counseling 4
Develops skills in interviewing and provides a base for student to build a style of his/her own.

4040 Basic Health Sciences 4
This course is designed as a holistic overview of the physical, psychological and social needs of those people residing in extended care facilities. Effective treatment modalities to meet the various needs of residents will be addressed.

4041 Directed Practice I 4
Offers the student an opportunity to apply acquired values, concepts and skills in supervised work experiences at appropriate agencies.

4042 Introduction to Activity Therapy 4
This course will prepare the student to choose developmentally appropriate activities for children from infancy to early adolescence. The emphasis will be on activities that promote physical development and that encourage children to express themselves creatively. The course will help the student define what are creative activities.

4043 Recreation for Special Populations
This course provides knowledge of the nature and etiology of impairments including developmental disabilities, mental illness, physical disabilities and geriatrics and their potential impact upon an individual's ability to participate in recreational activities. Techniques needed to conduct a recreation program that allows successful participation by an individual with a disability will be explored.

4050 Group Process & Skills 4
A study of group dynamics, issues, and behavior. Includes information on group functioning and leadership, guidelines on working effectively with a co-leader, and practical ways of evaluating the group process.

4051 Directed Practice 2 4
Offers the student an opportunity to apply acquired values, concepts and skills in supervised work experiences at appropriate agencies. Continuation of Directed Practicum 1 (4041).

4052 Psychology of Aging 4
This course explores the physical, psychological, and social aspects of aging. Participants examine their own feelings about aging as well as societal attitudes.

4053 Physiology of Aging
This course will focus on the physical changes and common pathologies associated with the aging process. It also will focus on the psychological and social implications of such changes for human behavior. Throughout the course, there will be a focus on health promotion and disease prevention during the later years.

4054 Recreation for the Elderly
This course explores the history, philosophy and development of recreation for the elderly. It provides facts, current research and practical techniques for conduction of therapeutic recreation programs for older adults.

4055 Nursing Home Administration 4
This course will explore the history of health care provided outside the home, and will give an overview of long-term health care facilities. It will examine the rules and regulations of nursing homes resident rights legislation, the physical plant requirements, etc.

4060 Program Planning and Evaluation 4
This course describes the components of administration of human service agencies. It also addresses the practitioner's skills needed to be a case manager. You will also be introduced to components of social policy development and specific social policy issues in the social services field.

4061 Directed Practice 3 4
Offers the student an opportunity to apply acquired values, concepts, and skills in supervised work experiences at appropriate agencies. Continuation of Directed Practice 2 (4051).

4062 Introduction to Community Organizations 4
This course identifies the multifold programs and activities of social welfare and community services.

4063 Coordination of Volunteers 4
This course develops skills and knowledge necessary for productive volunteer management. It examines the functions and attitudes of a successful volunteer program manager and explores basic skills necessary to plan, interest volunteers in, and maintain a successful program.

4065 Human Services Topical Seminar 3
Explores current topics in the Human Services field.

4066 Extended Care Facility Activity Directors Course 4
Explores the philosophy and investigates the development of activity programs for residents living in nursing homes. It focuses on offering activities which will meet an individual's physical, social and emotional needs. It is a state approved course.

4067 Social Services in Long Term Care 4
Introductory course designed for individuals who want to provide social services in long-term care facilities. Provides practical and useful information for working with the elderly population.

4070 Introduction to In-Home Child Care 2

4071 Safety In-Home 2
A course for students training to be Nannies and provide in-home care for children. The focus will be on keeping children safe and healthy and will include safety proofing the home, cleanliness, first aid, and caring for the sick child.

4072 Professional In-Home Child Care 2
How to present oneself to an employer, how to negotiate a contract, time management, and professional growth.

4201 Surgical Concepts 2
Presents selected basic nursing procedures and performance skills. Relates aseptic concepts and techniques to the special needs of the operating room. Covers preoperative and postoperative care of the patient.

4211   Surgical Techniques 1   10
Applies the principles of sterile technique to the preoperative, operative, and postoperative care of the patient. Includes orientation to an ideal situation, patient positioning and transportation, concepts and anesthesiology, techniques of handling and drapes, care of contaminated cases, attention to explosion hazards, prevention of infections, processing and preparation of nondisposable items, sterilization, instrument identification, suture and needle use, care of surgical specimens, record-keeping, surgical preps, and hand-scrubbing, gowning, gloving procedures and assisting with circulating duties.

4221   Surgical Procedures 1   5
A study of basic surgical procedure in relation to the total physiological aspects of surgical intervention. This includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure, and a review of the total patient care including pre-operative care, diagnostic tests and immediate post-operative care.

4230   Surgical Procedures 2   5
A study of advanced surgical procedure in relation to the total physiological aspects of surgical intervention. This includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure, and a review of the total patient care including pre-operative care, diagnostic tests and immediate post-operative care.

4240   Clinical Applications 3   10
Clinical experience in the affiliating hospitals will enable the Surgical Technology student to correlate the basic principles and concepts of theory to the working situation. Experiences include scrubbing and circulation on selected major and minor surgical procedures, observing and assisting with selected diagnostic procedures, and observing and assisting with procedures in related departments.

4242   Surgical Procedures 3   10
A study of specialized surgical procedure in relation to the total physiological aspects of surgical intervention. This includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure, and a review of the total patient care including pre-operative care, diagnostic tests and immediate post-operative care.

4401   Foundation of Nursing   3
Presents the art and science of practical nursing, the goals and the role of the Licensed Practical Nurse on the health care team. Introduced is the concept of the nursing process as practiced within the wellness/illness continuum. Aspects of basic nursing care are included.

4402   Collecting, Reporting, and Recording Patient Data   3
Introduces the collection, reporting, and recording of pertinent information, in correct medical terminology, for use in the planning of preventative, rehabilitative, and therapeutic care. Focus on holistic man's vital sign responses to the internal and external environment; on the practical nurse's state on the health continuum, on the nursing process, and on the role and responsibility of the Licensed Practical Nurse for data gathering and accountability for its dissemination.

4403   Therapeutic Measures   6
Focuses on the art and science required for the Practical Nurse to carry out preventative, therapeutic, and rehabilitative nursing interventions requiring advanced skill and knowledge. The nursing process as it relates to the role of the practical nurse is integrated throughout the course.

4406   Holistic Approach to Health   3
Orients the student to the holistic approach to the art and science of practical nursing. Included will be holistic aspects of care, the wellness/illness continuum, and therapeutic relationships.

4407   Nutrition   2
Introduces the basic principles of nutrition and diet, in wellness and illness for various age groups. Emphasis is placed upon the role of the practical nurse in assisting the patient to meet nutritional needs.

4412   Endocrine Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with endocrine conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4415   Cardiovascular Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with cardiovascular conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4416   Gastrointestinal Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with gastrointestinal conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4419   Respiratory Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with respiratory conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4423   Medical-Surgical Clinical Nursing 1   6
Correlates medical/surgical content and nursing practice. The nursing process is used as the basis of decision making within the practical nurse role. Emphasis is placed on the holistic aspect of man along the wellness/illness continuum.

4425   Musculoskeletal and Neurological Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with musculoskeletal and neurological conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4426   Genitourinary Nursing   2
Identifies the role of the practical nurse in providing holistic care for patients with genitourinary conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4432   Medical-Surgical Clinical Nursing 2   7
Correlates to medical/surgical content with advanced nursing practice. The nursing process is implemented within the role of the practical nurse.

4435   Vocational Issues and Trends   2
Introduces organizational patterns and the role of the Licensed Practical Nurse in the health care delivery system. Emphasis is placed on continuing education as a means for maintaining competencies. Ethical, legal, and historical aspects are included to develop an awareness of the practical nurse.

4437   Dermatologic and E.E.N.T. Nursing   1
Identifies the role of the practical nurse in providing holistic care for patients with dermatologic and E.E.N.T. conditions. It describes common conditions on the health continuum and selected nursing interventions, by way of the nursing process, in providing preventative, rehabilitative, and therapeutic care.

4438   Gerontology   3
Focuses on the normal aging process along the wellness/illness continuum experienced in the later stage of life. Trends in preventative, rehabilitative, and therapeutic care.

4439   Geriatric Clinical Nursing   3
Correlates gerontologic content with holistic care of the older adult. Implements the nursing process with the role of the practical nurse to maintain, promote, and restore health or to prevent illness.

4455   Maternal/Child Health Nursing   5
Focuses on conditions and selected nursing interventions based on the nursing process, in providing preventative, rehabilitative, and therapeutic care for the mother and child. The role of the Licensed Practical Nurse is identified in providing holistic care within a dynamic environment.

4463   Maternal/Child Clinical Nursing   4
Correlates maternal/child health content with the holistic nursing care of the mother and child. Emphasis is placed on the normal maternity cycle and the normal growth and development of the child within the wellness/illness continuum.

4609   Nursing Procedures for X-ray Technicians   2
Studies basic nursing care as provided by the radiologic technologist. Covers patient-technician relationship, principles such as asepsis, isolation, and first aid.

4613   Radiation Physics 1   3
Introduces physics as utilized in the production of X-rays. Includes physical laws pertaining to atomic structure, chemical properties and reactions, and electrical circuitry.

4620   Orientation to X-ray Technology   4
Discusses the historical development of X-ray technology and the role and function of the radiologic technologist. Studies principles of the X-ray tube, properties of radiation, film-processing equipment, intensifying screens, terminology, and introductory techniques of positioning the chest. Emphasizes procedures and practices of radiation protection.

4623   X-Ray Clinical Education 1   4
Implements Clinical Category 1 of the Competency Model. Includes laboratory demonstration and clinical practice. Co-requisite 4624.

4624   Radiographic Positioning 1   3
Correlates positioning terminology and techniques and film evaluation with Clinical Category 1. Demonstrates upper extremity, intravenous pyelogram, and gallbladder examination.

4625   Radiographic Exposures 1   3
Presents film construction, sensitometry, and processing techniques. Emphasizes the definition and effect of prime radiography factors related to the formulation of exposures.

4633   Radiographic Positioning 2   3
Correlates positioning terminology and techniques and film evaluation to Clinical Category 2. Includes study of low extremity, and gastrointestinal system.

4634   Radiographic Exposures 2   3
Demonstrates, by means of problem-solving exercises, conversion factors affecting the elements of radiographic quality, heat unit determination, and technique chart construction.

4638   X-ray Clinical Education 2   4
Tests the student's competency skills in Category 1, and introduces Category 2 of the Competency Model laboratory testing. Includes supervised clinical experience. Co-requisite 4633.

4642   Imaging Techniques   3
Presents theories, principles, and demonstrations of current image modalities, including the image intensifier, tomography, ultra sound, and CT Scan, Magnetic Resonance Imaging.

4643   Radiographic Positioning 3   3
Correlates positioning terminology, techniques, and film evaluation to Clinical Category 3. Includes the vertebral column, bony thorax, and mammography.

4648   X-ray Clinical Education 3   4
Introduces Category 3 of the Competency Model laboratory testing, while competency skills over Category 2 are tested. Implements a skill maintenance program and continues clinical application. Corequisite 4643.

4650   Radiographic Positioning 4   3
Correlates positioning, terminology, anatomy and techniques and film evaluation for skull procedures. Specialty procedures are also presented including myelography, pelvimetry, foreign body location.

4655   X-ray Clinical Education 4   6
Introduces Category 4 of the Competency Model in laboratory testing, while competency skills over Category 3 are tested. Continues maintenance of skills over previous categories during clinical applications. Co-requisite 4650.

4668   X-ray Clinical Education 5   6
Completes Category 4 of the Competency Model in laboratory testing. Continues skill development in all previous categories and clinical applications.

4672   Radiobiology   3
Presents theory and principles of the effects of ionization radiation upon living tissues. Includes a review of dosage measurements, DNA structure and function, and cellular radiosensitivity, protection for patient and personnel.

4678   X-ray Clinical Education 6   6
Completes all category testing. Continues skill development in all categories.

4685   General Examination Review   4
Reviews contents of program, emphasizing anatomy, physics, exposure principles and positioning. Simulated American Registry tests prepare the student for the certification examination.

4688   X-ray Clinical Education 7   6
Includes final competency testing for students who have not completed X-ray Education 6 (4678). Continues skill maintenance over all categories.

4699   Radiographic Quality Assurance   3
Presents theories and practices pertaining to the establishment of department exposure standards. Includes equipment tests for reliability, problem solving, reject analysis, and cost containment. Offers practical experience in processor monitoring, record-keeping, and radiographic quality control tests.

4812   Respiratory Therapy Science 1   6
Presents a brief history of respiratory care; the principles and practices of oxygen administration; an introduction to manual resuscitators; equipment cleaning and sterilization techniques; humidity and basic aerosol therapy; and gas analyzers. Emphasis is placed on safety.

4813   Nursing Techniques   2
Includes patient needs, asepsis, clean and sterile techniques, body mechanics, cardiopulmonary resuscitation, physical assessment, vital signs, isolation techniques, medical terminology and medical records.

4814   Advanced Respiratory Care   4
Presents in-depth approaches to the respiratory care management of critically ill neonatal, pediatric, and adult patients. Special emphasis is placed on techniques of patient evaluation, monitoring, transportation, and management.

4815   Cardiopulmonary Pathophysiology   3
Studies in-depth etiology, symptomatology, diagnosis, therapeutics, and prognosis of disease conditions as they relate to respiratory care. Special emphasis is placed on physiologic interrelationships of body systems, for example, the cardiopulmonary, the renal, and the central nervous systems.

4816   Cardiopulmonary Monitoring   3
Presents an in-depth study of the equipment, techniques of data collection, and the interpretation and evaluation of the data used in invasive and non-invasive monitoring of the cardiopulmonary system.

4820   Cardiopulmonary Physiology   4
Studies the cardiopulmonary system. Includes ventilation, perfusion, gas exchange, introduces blood gases, acid base regulation, and physiologic monitoring.

4821   Respiratory Therapy Science 2   6
Studies positive pressure breathing modalities, environmental therapy, airway management, incentive spirometry, chest physiotherapy, pulmonary rehabilitation, aerosol therapy, and respiratory pharmacology; introduces mechanical ventilation.

4823   Clinical Practicum 1   5
Provides supervised experience in oxygen, humidity and aerosol therapy, and various respiratory care tasks in clinical areas. Continuing certification in CPR is required.

4831   Clinical Medicine   4
Introduces etiology, symptomatology, diagnosis, therapeutics, and prognosis of selected pulmonary diseases.

4833   Clinical Practicum 2   8
Provides supervised experience in selected therapeutic modalities, establishment and maintenance of artificial airways, and cardiopulmonary diagnostic procedures. Specialty rotations in the areas of neonatal intensive care, pediatrics, cardiopulmonary rehabilitation and home care may be included. Continuing certification in CPR is required.

4835   Respiratory Therapy Science 3   6
Introduces concepts and techniques of critical respiratory care of adults and infants. Studies adult, pediatric, and neonatal mechanical ventilators.

4841   Clinical Practicum 3   5
Provides additional supervised experience in the therapeutic modalities practiced in Clinical Practicums 1 and 2. Specialty rotations may include, but are not limited to, the areas of inservice education, cardiopulmonary rehabilitation, neonatal, pediatric, and/or adult critical care, and home care/extended care. Continuing certification in CPR is required.

4844   Cardiopulmonary Laboratory Diagnosis   4
Introduces the function of the cardiopulmonary laboratory and provides an understanding of basic cardiopulmonary function tests and techniques. Includes basic blood gas analysis and interpretation, and the study of medical laboratory data.

4850   Therapist Practicum 1   7
Provides supervised advanced clinical experience in neonatal, pediatric and adult critical care and experience in advanced cardiopulmonary diagnostics, for example, electrocardiography, echocardiography, pulmonary function testing, arterial blood gas analysis, and specialty rotations. Continuing certification in CPR is required.

4851   Therapist Practicum 2   7
Provides supervised clinical experience in respiratory care management of critically ill neonatal, pediatric and adult patients. Clinical experience focuses on integration of the physiologic interrenal, and the central nervous systems. Specialty rotations may be included. Continuing certification in CPR is required.

5313   Fire Technology   3
Examines fire problems and other aspects of the fire technology field. Attention is given to characteristics and behavior of fire and to the hazardous properties of materials.

5314   Fire Apparatus 1   3
Studies the use of all types of fire-fighting apparatus, including aerial ladders, pumpers, elevating platforms, hoses, and aircraft fire equipment. Special attention is given to maintenance of equipment and to emergency driving hazards on dry and wet roads.

5322   Electricity   3
Introduces basic concepts of electricity for electrical workers. Studies include series and parallel circuits, series-parallel combinations, Ohm's Law, and definitions of electromotive force, current, and resistance.

5323   Fire Apparatus 2   3
Includes construction, operation, and maintenance of aerial ladders and platforms and other specialized equipment.

5324   Fire Department Hydraulics 1   3
Treats problems related to public water supply and distribution systems, including watermains, hydrants, valves, and fittings. Also demonstrates the use of pumpers to ensure adequate supply and pressure.

5325   Fire Department Hydraulics 2   2
Offers further study of problems pertaining to public water supply and distribution.

5332   Fire-Fighting Strategy and Tactics 1   3
Prepares the student to make responsible decisions concerning fire ground tactics at the battalion or company level. Examines situations frequently encountered by the fire fighter.

5333   Fire Alarm and Protection Equipment   3
Presents fundamentals of municipal and local alarm systems. Examines heat, smoke, and flame detectors; telephone and tele-equipment; sprinkler systems; and protective alarm and detection systems.

5334   Fire-Fighting Strategy and Tactics 2   3
Provides further training in fire ground tactics at both battalion and company levels. Emphasis is placed on the tactical simulator.

5342   Hazardous Materials 1   3
Reviews basic chemistry and introduces storage of hazardous materials, handling laws and standards, and fire fighting practices pertaining to hazardous materials.

5343 Rescue Practices and Procedures 3
Various rescue practices and procedures are addressed. Ropes and knots as employed in rescue are included. Protective breathing apparatus and search and rescue are part of the course's focus. Ladder practices and procedures are part of the content. Safety as a component of the fire-fighter's rescue performance is stressed. Various hazards where rescue would be necessary are presented. Prerequisite 5334.

5350 Applied Chemistry 2
Studies the fundamentals of chemistry, including solutions, acids and bases, chemical kinetics, and equilibrium. Introduced are organic, bio-, and industrial chemistry. Applications to Applied Fire Science program are stressed. Prerequisite 8307.

5351 Industrial Safety and Fire Control 3
Studied are the principles of combustion; classes of fires; characteristics of combustibles, explosions, and backdrafts; techniques of fire control; methods of heat transfer; flashpoint burning point; ignition temperature; vapor density; use of tools and equipment; safety procedures; and protective clothing and breathing apparatus. Prerequisite 8307.

5352 Hazardous Materials 2 3
Continues study of Hazardous Materials 1. Prerequisite 5342.

5353 Fire Investigations 4
Study is focused on the responsibility of the firefighter, investigator, and department in fire investigations, fire cause and loss, collection and preservation of evidence, and determination of fire origin. Emphasis is on the application and assistance of various scientific acids to the investigation. Prerequisite 5313.

5360 Fire Service Inspection 4
Studies the organization and function of fire prevention and inspection; including hazards and the enforcement of codes and laws. Prerequisite 5313 and Corequisite 5363.

5362 Fire Department Specifications 4
This course consists of specifications of equipment and apparatus, buildings, and other necessary sources/materials/etc., that a department must have. Regulations will be included. Prerequisite 5323.

5363 Fire Prevention 4
Covered are effects of public relations on fire prevention. The organization and function of the fire prevention organization, including inspections, surveying and mapping procedures is considered. Life codes and other relevant codes and ordinances are presented for study. Prerequisite 5313 and Corequisite 5360.

5364 Legal Problems in Fire Science 4
Studies law governing organization and operation of fire departments, liability, mutual aid, arson, fire prevention, building construction, employee relations-labor relations, and insurance. Prerequisite 5353.

5422 Residential Construction Materials 3
Acquaints the student with the architectural and structural construction materials used in residential and small commercial buildings. These materials, their sizes, applications and alternatives are studied.

5430 Light Construction Presentation 3
(This is the first part of a three-part project.) An introductory course in the design of a residential structure with emphasis on size and space relationships. Individual rooms, traffic patterns, zones and exterior styling are considered. A working floor plan, foundation plan and wall section will be developed.

5431 Light Construction Layout 3
(This is the second part of the residential project.) A continuation with the design of a residential structure with emphasis on exterior materials, roofs and elevations. The building site will be evaluated and plot plan constructed. Door, window, and room finish schedules will be developed with appropriate details.

5432 Mechanical and Electrical Equipment 3
Focuses the student's attention on the mechanical and electrical layout drawings required for this residential project. An electrical plan; plumbing plan; plumbing requirements and heating and cooling system are discussed. Prerequisite 5433.

5433 Light Construction Detailing 3
(This is the last part of the residential project.) A continuation with the design of a residential structure with emphasis on detailing. Bathroom and kitchen elevations are drawn locating fixtures and wall finish materials. Detailed sections through the stairways and fireplace are made identifying the structural components.

5440 Medium Construction Presentation Drafting 3
(This is the first part of a commercial building project.) An introductory course covering the space and use requirements for a commercial concrete structure. Emphasis is placed on masonry units, poured concrete and precast members. Prerequisite 5433.

5441 Medium Construction Layout Drafting 3
(This is the second part of the commercial project.) A course continuing the design of a concrete and masonry structure with emphasis on the wall sections and building elevations. Prerequisite 5433.

5442 Medium Construction Detail Drafting 3
(This is the third part of the commercial project.) Introduces the student to the development of floor and roof plans, features, and scheduling.

5450 Heavy Construction Presentation 3
(This is the fourth part of the commercial project.) An introductory course which allows the student to construct a two-point perspective (rendered) to be used as a title sheet and also a site (plot) plan of the property. Prerequisite 5442.

5451 Heavy Construction Layout 3
(This is the fifth part of the commercial project.) The project includes floor and roof framing plans, elevations and a plot plan. Prerequisite 5442.

5452 Estimating 3
Presents concepts and principles of quantity takeoff of building materials as required by construction contractors.

5453 Heavy Construction Detail Drafting 3
(This is the sixth part of the commercial project.) The student will study and develop electrical, plumbing, and mechanical (HVAC) plans.

5454 Interactive Computer Aided Design (CAD) 3
Lab course designed to increase a student's speed using the computer and to further develop the student's prior basic computer skill. This course will challenge the student to apply computer graphics to advanced drafting problems. Prerequisite 5456.

5455 Architectural Computer Aided Design 3
Advanced computer graphics course deals exclusively with architectural type drawing. An extensive use of figure parts will be created and called upon for insertion and manipulation. Layering schemes are devised for easy graphic insertion. Prerequisite 5457.

5456 Computer Aided Design Fundamentals 3
This introductory course assumes you are a proficient draftsman, but have no prior computer graphics experience. This course will familiarize you with the command syntax, two dimensional graphics generation, text and basic dimensioning. Prerequisite 7581.

5457 3-Dimensional Computer Aided Design 3
Advanced course in computer graphics which involves parts structuring, multiview generation, three-dimensional commands, working surfaces, library parts and execute files. Prerequisite 5454.

5459 Computer Aided-PC Board Design 3
Instructs in electrical schematics, schematic symbols, and printed boards. Offers laboratory experience in using the circuit board.

5471 Surveying Theory 3
Presents theory and techniques of surveying, including the use and care of the level, transit, and other surveying equipment.

5475 Topographic Map Drafting 3
Provides experience in topographical surveying, methods of establishing grades, and estimation of quantities required for cuts and fills.

5478 Specifications and Codes 3
Covers contract documentations and specifications as they relate to building plans, local codes, and acceptable techniques. Prerequisite 5422.

5497 Computer-Aided Architectural Detail 3
Continuation of detailing begun in 5455, with emphasis on structural detailing.

5601 Basic Body Repair 1 2
This course deals with the characteristics of body metals and the installation of molding, ornaments, and fasteners.

5602 Basic Body Repair 2 2
The care and use of hand and power tools and equipment, with emphasis on tool and shop safety is presented. Also included is the analysis of damaged sheet metal.

5603 Basic Body Repair 3 2
Studied are the advanced techniques of body repair, with emphasis on grinding, picking, filing and plastic applications in the repair of minor damage. Prerequisite 5602.

5604 Basic Body Repair 4 2
Skills used in preparing automobile for painting; cleaning, masking and sanding are introduced. Prerequisite 5602.

5609 Basic Body Repair 1 Practicum 1
Supplements Basic Body Repair 1. Co-requisite 5601.

5611 Collision Damage Repair 1 2
This study prepares students to analyze extensive body damage and to determine the tools and procedures needed to replace panels. Prerequisite 5602.

5612 Collision Damage Repair 2 2
This course continues the study of panel replacement fundamentals, with emphasis on skill development. Prerequisite 5611.

5613 Collision Damage Repair 1 Practicum 1
Supplements Collision Damage Repair 1. Co-requisite 5611.

5614 Collision Damage Repair 2 Practicum 1
Supplements Collision Damage Repair 2. Co-requisite 5612.

5615 Basic Body Repair 2 1
Supplements Basic Body Repair 2. Co-requisite 5602.

5616 Automotive Chassis and Accessory Circuits 3
Introduced are the fundamentals of electrical theory, automotive components and circuits and troubleshooting techniques. Emphasis is placed on battery construction, function, and operation.

5617 Suspension and Alignment for Auto Body 3
This is a study of the suspension and steering parts of an automobile and the theory of wheel alignment and wheel balance. Covered are the five wheel alignment angles and wheel balance.

5620 Frame and Chassis 1 2
This course demonstrates the use of tools and frame machines for frame and chassis repairs. Included is the study of terms pertaining to front suspension and rear axle. Prerequisite 5602.

5621 Frame and Chassis 2 2
This course continues the study of Frame and Chassis 1 (5620), with emphasis on conditions found in frame damage. Included is the use of frame gauges, trim gauges, and other measuring devices. Prerequisite 5620.

5622 Frame and Chassis 3 2
This study develops skill with equipment used to attach car to frame machine. Emphasis is on correction of minor frame misalignments. Prerequisite 5621.

5623 Frame and Chassis 4 2
Emphasized is the repair of major frame damage. Included are inspections, analyses and procedures for restoring body structure alignment, and unibody automobiles. Prerequisite 5622.

5724 Auto Body Welding 1 2
The applications of welding techniques in the replacement and repair of panels, with emphasis on techniques peculiar to automotive body repair.

5625 Auto Paint Shop Practice 2
Auto painting with emphasis on the handling of material and equipment is introduced.

5626 Auto Body Sheet Metal Alignment 2
This course demonstrates the alignment of sheet metal, doors, trunks, and glass, bodysealing maintenance, and elimination of rattles. Provided is practical experience in the alignment of all body panels and glass, with attention to appearance, operation, and finishing (sealing) of parts.

5630 Collision Damage Appraising 2
The use of estimation guides, procedures for itemizing damage, meaning of abbreviations, numbers of parts, and the use of time and money conversion tables is studied. Emphasized are damage inspection, recording on estimate sheets, and calculation of costs. Prerequisite 5602.

5632 Auto Paint Shop Practice 2 2
This course covers theory and procedures pertaining to spot repair and total car refinishing.

5636 Auto Paint Refinishing 2
This is a continuation of auto painting, including the total refinishing of an auto. The course emphasizes treatment of the auto as a complete unit.

5638 Glass Installation 2
This course focuses on different types of automobile glass and their uses. How to remove and install front and rear glass, install and adjust side glass, bond the rearview mirror support, and use rubber channel and synthetic rubber adhesive is included.

5639 Fiberglass/Plastic Repair 2
Types of fiberglass and plastic materials used in auto body repair are introduced. Both interior and exterior applications are covered.

5642 Welding Practices/Auto Body 1 3
This is an introduction to basic welding processes with emphasis on safety and procedures as they pertain to the auto body repair field.

5643 Welding Practices/Auto Body 2 2
This is a continuation of Welding Practices/Auto Body 1 with emphasis on the manipulative skills required in arc and mig welding. Prerequisite 5642.

5813 Automotive Braking System 3
This is a study of the theory, service, and repair of automotive braking systems, and their components. Emphasis is on hydraulic theory and the repair of service booster units, master cylinder, wheel cylinder, caliper rebuilds, and drum and rotor service.

5814 Automotive Front End Alignment 3
Fundamentals of wheel alignment and wheel balance, including each of the five wheel alignment angles, steering wheel positioning, vehicle tracking, and wheel balancing are studied. Emphasis is placed on four-wheel alignment techniques that are required to align current model vehicles.

5822 Engine Tools and Equipment 3
This study familiarizes students with the tools, machines, and equipment needed for rebuilding internal combustion engines.

5825 Electronic Fuel Injection & Emission Controls 3
This is an intensive study of automobile fuels and carburetion systems, and fuel injection systems discussed include port, tuned, multi and E.F.I. Students will learn emission control as it applies to the fuel system. Emphasis is on the shop procedure necessary in determining the nature of troubles developed in the fuel and emission systems of the automobile causing air pollutants. There is also trouble-shooting of the fuel and emission systems, providing a full range of testing, adjusting, tune-up, and replacing experiences.

5828 Electronic Ignition Systems 3
The functions of the conventional breaker point ignition system and principles of operation and testing are covered in this course. Special emphasis is placed on the electronic ignition systems and the varied types used in conjunction with computer controls.

5832 Starting and Charging Systems—Testing 3
This is an intensive study of the construction, function, and principles of operation of the electrical units of the automobile, including batteries, starting motors, generators, alternators, charging systems, and regulators. Emphasis is placed on developing a comprehensive understanding of all electrical components and systems with special emphasis on problem diagnosis and bench repair of units. Prerequisite 8304.

5834 Engine Overhaul 3
Tear-down, inspection, measuring, cleaning, machining, repair, and assembly techniques pertaining to engine overhaul are studied. Attention is also given to cooling systems. Prerequisite 5822.

5835 Manual Transmission & Transaxle 3
This course studies theory, operation, troubleshooting, and the repair of the power train, with emphasis on operation and maintenance of clutches and manual transmissions. Includes front and rear wheel drives.

5836 Engine Overhaul-Practicum 1 1
This study develops skills in tear-down, inspection, measuring, cleaning, machining, repair, and assembly techniques used in engine overhaul. Included is work on cooling and lube systems. Corequisite 5834.

5838 Engine Overhaul-Practicum 2 1
This course develops skills in tear-down, inspection, measuring, cleaning, machining, repair, and assembly techniques used in engine overhaul. Included is work on cooling and lube systems. Corequisite 5834.

5845 Advanced Engine Performance 3
This is an advanced course on the theory, diagnosis, and repair of computerized ignitions and fuel systems and of the latest diagnostic equipment and procedures. Prerequisite 5828, 5825, Corequisite 5891.

5847 Automotive Air Conditioning 3
This is an intensive study of automotive air conditioning, including both heating and cooling. Special emphasis is placed on the operation and theory of the air conditioning refrigeration system and its components. Vacuum and electrical control systems are also included. Prerequisite 8304.

5851 Automotive Accessories and Electronics 3
This is a basic study of the function, construction, principles of operation, and troubleshooting techniques for the varied accessories of automotive vehicles, to include windshield washers and wipers, power seats, power windows, adjustable steering wheels, power tailgates, headlights, speedometers, etc. Specific automotive applications include: installation of radios, antennas, speaker systems, operation and maintenance of lighting and signaling systems, headlight dimmers, electrically operated safety devices, buzzers, flashers, electric motor operated devices, door adjustment and glass installment. Prerequisite 8304.

5854 Automatic Transmission Theory and In Car Service 3
This is a lecture-laboratory course in automotive transmission which includes construction, function, and principles of operation. Emphasis is placed on power flow within the transmission. Includes pressure checks and in car service procedures.

5856 Automatic Transmission Overhaul 3
Emphasis is placed on practical work experience in the lab. Students will learn to overhaul automatic transmission and transaxle assemblies and test the units on an automatic transmission dynamometer. Prerequisite 5854.

5858 Automatic Transmission 4 Overhaul 1
This is a continuation of course 5856. Emphasis is placed on practical work experience in the lab. Students will learn to overhaul automatic transmission and transaxle assemblies and test the units on an automatic transmission dynamometer. Corequisite 5856, 5873.

5862 Comprehensive Diagnosis and Procedures 1 3
This course develops advanced skills in diagnosis and in major and minor repair to journeyman's standards in a minimally supervised work environment similar to that of an automotive service center.

5865 Automotive Service Organization and Management 4
This course includes shop organization and duties of service advisor. Handling of customers, inventory, and buying practices will be covered.

5866 Occupational Health and Safety 4
This course covers safety related items in auto service. Student will be Red Cross certified in first aid.

5873 Automatic Transmission Overhaul Practicum 2 1

5891 Computerized Engine Control Systems 3
This is an intensive study of computerized ignition, carburetion, fuel injection, and ignition sensors used on late model U.S. passenger cars. This course will cover theory, diagnosis, and the repair procedure of command control, M.C.U., EEC IV, lean burn and spark control systems. Corequisite 5845.

6001 Carpentry Fundamentals 3
This course presents the history of the carpentry trade, traditional and progressive building techniques, and current construction methods and trends. Corequisite 6002.

6002 Construction Tools and Skills 3
The use of various types of construction tools is studied. Emphasis is on safety, maintenance, and skill development. Corequisite 6001.

6003 Construction Materials 3
The materials used in the building industry are covered and studied in depth including the manufacturing process and systems of purchasing.

6011 Floor and Wall Layout and Construction 3
Covered are the design and construction of floor and wall systems. Skills needed for layout are developed. Prerequisite 6001, 6002.

6012 Roof Construction 3
The course covers the design and construction of roof systems. Use of the framing square is emphasized. Prerequisite 6002.

6014 Electrical Wiring Fundamentals 3
This course covers basic electricity, including electron theory, Ohm's Law, use of electrical measuring instruments, simple series and parallel circuits, switching devices, and fusing.

6022 Plumbing Design and Installation 1 3
Presents techniques for working with pipes and fittings. Demonstrates how to rough in plumbing and install drainage, water systems, fixtures, and water heaters in compliance with the plumbing code.

6024 Plumbing Fundamentals 3
The operation and function of the home plumbing system is studied. Introduced are pipe drawings and isometric pipe layout, blueprint symbols, and use of an architect's scale.

6026 Advanced Skills in Masonry 3
Building of corners, wall reinforcing, masonry supports, chases, small one-flue chimneys, corbelling, and wall copping are covered. Emphasis is on residential veneering, cavity wall construction, concrete reinforcement and special finishes.

6027 Masonry Estimating and Specifications 3
This course covers masonry specifications, line and symbol identification, and dimensioning and scaling in working drawings. Emphasis is on residential construction.

6031 Electrical—Commercial Wiring 3
Introduced are wiring methods and materials in conformance with the National Electrical Code. The fundamentals of mechanical and electrical installations, with emphasis on tool usage and material selection are included.

6036 Masonry and Concrete Fundamentals 3
This study includes materials and methods of construction, building layout preparation of the building site, footings and foundations, and wall construction, with form construction and erection. Emphasis is on the use of masonry tools and materials and the properties of brick and concrete block. Prerequisite 6002, 6003.

6062 Wall and Floor Coverings 3
Studies modern interior floor and wall covering materials and the procedures used in installing them. Illustrates how different materials may affect decor. Includes assessment of the durability of commonly used materials and instruction in maintenance.

6410 Basic AC/DC Circuits 4

6413 Fabrication 3
The techniques in diagramming electronics circuits are studied including lettering, view identification, and symbol recognition. Additionally, electronic fabrication principles including safety, component identification, hand tools, printed circuit board layout and assembly, and soldering skills are covered.

6420 Introduction to Data Processing & Computers 3
This course is an introduction to the architecture of a modern computer with emphasis on hardware and various software. Terminology is stressed. The hands-on approach is taken.

6434 Introduction to Active Devices 3
The basic structure and principles of operation of vacuum tube and transistor devices are introduced. Active and passive components in power supply and amplifier circuits are studied. Prerequisite 6470.

6435 Electronic Circuits 1 3
This course studies use of active and passive components in power supply, oscillator and amplifier circuits. Prerequisite 6434.

6446 Integrated Circuits 3
Theory, operation and construction of linear integrated circuits are studied. Emphasis is placed on the operational amplifier and its applications. Prerequisite 6434, 6435.

6447 Special Semiconductors 3
Theory and operation of semiconductor devices other than the bipolar transistors are introduced. The course includes opto-electronic components, FETs, and other special semiconductor devices. Prerequisite 6434.

6451 Communications Electronics 1 3
This course studies AM receiver and transmitter principles and circuits in order to develop an understanding of amplitude modulation. Prerequisite 6435.

6452 Communications Electronics 2 3
This course studies FM receiver and transmitter principles and circuits in order to develop an understanding of frequency modulation. Prerequisite 6454, Corequisite 6451.

6453 Communications Electronics 3 3
The operation and maintenance of commercial AM, FM, and television broadcast equipment and antennas is studied. Included is the study of link transmitters. Prerequiste 6451, 6452.

6454 Electronic Circuits 2 3
This course presents pulse and logic circuit fundamentals, including waveforms of the non-sinusoidal variety frequently used in pulse and logic circuits. Prerequisite 6434, 6447.

6455 Circuit Analysis 3
This is a study of system and network analysis techniques. Emphasis is placed on circuit principles, electronic axioms and theorems for both alternating current and direct current circuits. Prerequisite 6470, 6471.

6460 Microwave and Radar 3
Studies microwave generators, waveguides, relay systems, and components, including klystrons, magnetrons, gas diodes, and their applications.

6461   Antennas and Wave Propagation   3
This course studies the history and current application of antennas and their related components. Satellite receiving antennas are covered in detail. Prerequisite 6453.

6470   AC Fundamentals   6
This study provides a working knowledge of the electrical principles and laws pertaining to alternating current. Voltage, current and resistance relationships as applied to alternating current are emphasized. The relationship of inductance and capacitance to alternating current circuitry is included. Prerequisite 6471.

6471   DC Fundamentals   6
This course studies electrical principles and laws, pertaining to direct current circuits. In addition magnetism, capacitance and inductance, as related to DC, are covered. Component identifications, proper use of lab equipment, and interconnection of circuit components are included.

6472   Optoelectronics   3
Selected topics of optoelectronics are covered.

6475   Protocol for Data Communications   6
This course covers the installation, operation and repair of communication systems, such as computer networks, and PBXs. Prerequisite 6584.

6502   Digital Troubleshooting   4
Techniques of logical troubleshooting of digital circuits are studied. Includes interpretation of schematic diagrams for both combinational and sequential logic circuits. Also covered are the isolation of faults to the piece part level and introduction of highspeed test equipment commonly used to locate faults. Prerequisite 6520.

6520   Microprocessors 1   3
This course introduces the microprocessor, including the architecture of a typical processor, addressing modes, programming model, and instruction set. Number systems, codes, and computer arithmetic are reviewed. Prerequisite 6577, 6578, 6420, Corequisite 6533.

6524   Troubleshooting Techniques   3
Techniques of logical troubleshooting of electronic circuits and simple systems, with emphasis on signal tracing and signal injection methods are studied. Communications skills are included. Prerequisite 6452.

6527   Peripherals 1   3
This is a study of peripherals commonly used with small machines, including keyboards, LED display, cassette recorders, disc drives, and teletype. Prerequisite, 6520, 6533, Corequisite 6535.

6533   Microprocessors 2   3
This course studies support devices and interfacing with simple I/O devices. Included are monitor programs, memory, and machine language programming. Prerequisite 6577, 6578. Corequisite 6520.

6535   Peripherals 2   3
Credit card readers, CRT displays, and paper-tube and floppy disk devices are examined. Included are the study of each device and the interfacing with typical small machine I/O port devices. Prerequisite 6520, 6533, Corequisite 6527.

6538   Rotating Machines 1   3
Introduced are common industrial rotating machines, both single and polyphase. Prerequisite 6470.

6539   Rotating Machines 2   3
This course offers further study of industrial rotating machines, with emphasis on power distribution. Prerequisite 6470, Corequisite 6538.

6543   Basic Industrial Electronics   3
The characteristics and applications of various measuring and process control instruments that are found in industrial situations are studied. The calibration, hook-up and application of these instruments as well as transducers are included. Prerequisite 6446.

6544   Introduction to Industrial Controls   3
The basics of industrial controls are studied as related to industrial electronics. Included are basic and pilot control devices and circuit protection will be covered. Prerequisite 6538, 6539.

6547   Linear Integrated Circuits Applications   3
Emphasized are circuit applications of linear ICs, including op amps, voltage regulators, and other analog circuits. Prerequisite 6447, 6454.

6553   Industrial Electronics 1   3
This course studies electronic systems and circuits. Prerequisite 6543, Corequisite 6554.

6554   Industrial Electronics 2   3
This course studies process controls and service systems. Prerequisite 6543, Corequisite 6553.

6562   Digital Principles 1   3
Combination logic through use of Boolean algebraic expressions, logic gates and binary numbers are studied. Prerequisite 6470, Corequisite 6563.

6563   Digital Principles 2   3
This is a continuation of Digital Principles 1 (6562) with emphasis on counters, clocks, registers, and arithmetic circuits. Prerequisite 6470, Corequisite 6562.

6577   Digital Principles 3   3
This is a continuation of the courses Digital Principles 1 (6562) and Digital Principles 2(6563). The basic concepts of logic, circuits are applied to arithmetic, control and computer circuits. Emphasis is placed on counters, clocks, registers, memory; digital to analog and analog to digital conversions. Prerequisite 6563, Corequisite 6578.

6578   Digital Applications   3
This course studies interfacing and use of various digital devices, circuits and systems. Prerequisite 6435, 6563, Corequisite 6577.

6584   Telecommunication Principles   3
This course studies data transmission systems.

6901   Manufacturing Process   3
This course offers the student an opportunity to become familiar with manufacturing process, equipment, selection of materials, and capabilities of modern machine tools. Basic method of fabrications as well as measurement and gauging devices to ensure their accuracy are also studied.

6903   Sensor and System Interfacing   3
The operation and application of limit switches, photoelectric and proximity sensors is included. The interfacing of all discrete sensors with robot controllers and programmable controllers is covered along with basic interfacing techniques used in digital network.

6905 Robotics Principles 1 3
This course provides an overview of the current robotics industry starting with a brief history which is followed by a review of the basic terms used in the field. The robots are classified by geometry, power source, application, path control and intelligence. Includes operation of different types of end effectors, robot controllers and system sensors. Lab experiments with robotic trainers.

6907 Robotics Principles 2 3
The operation and programming of several full-size robots are covered. Lab experiments using the Adept, Asea, Milacron T3 and Unimate robot are performed to reinforce lecture material.

6909 Fundamentals of CAD/CAM 3
The student is introduced to the principles of computer-aided drafting and design and computer-assisted manufacturing. Fundamentals of programming CNC equipment is taught using hands-on laboratory methods with actual CNC equipment. Various types of CAD/CAM systems will be introduced in this class.

6911 Work Cell Design 3
The basic principles used in the design and implementation of robots in industrial work cells are covered. The course includes selection of the best work-site, selection of the robot system, application of cell sensors, development of cycle times, economic analysis, safety consideration, proposal preparation and human resources development. Prerequisite 6905, 6907.

6913 Automated Manufacturing Systems 1 3
Presents basic concepts of hard automating systems and automated assembly. Attention is given to production models, manufacturing operations and plant layout.

6915 Automated Manufacturing Systems 2 3
Covers the identification, operation and application of the many systems integrated into flexible manufacturing systems. Attention is given to material-handling hardware; forming, shaping, and processing machinery; automatic warehousing and storage equipment; and CAM control systems.

6917 Advanced Robotic Systems 3
An advanced course covering communication, machine vision, tactile feedback and other advanced topics. An advanced robotic design project is also expected from each student by the end of the quarter.

6919 Manufacturing System Control 3
An introductory class into control systems. Topics include relay ladder logic, programmable controllers and direct computer control. Extensive lab work reinforces theoretical concepts.

6921 Failure Analysis Techniques 3
The course covers the procedures that are used to isolate faults in highly automated manufacturing systems. Troubleshooting techniques which identify the system problem in the shortest time will be emphasized. Prerequisite 6903.

6923 Applied Mechanisms 3
A study of principles, concepts, and applications of industrial mechanisms. This includes chain drives gear, ball screws, belt drives, couplings, and bearings. Operational principles, uses, maintenance and procedures for repair and replacement are included.

6925 System Project 2
Offers opportunity for each student to apply acquired knowledge of automated systems to the resolution of an actual industrial manufacturing problem.

7002 Industrial Laboratory Techniques
Virtually every manufacturing or industrial service facility uses a laboratory in some part of their production, quality control, or research work. Industrial laboratory technicians commonly work in and/or supervise such labs. This lecture course will familiarize the student with normal activities. Several field trips will be taken to local companies in the Indianapolis area. Prerequisite 7013.

7004 Industrial Instruments and Techniques 1 4
This is a hands-on industrial laboratory course. Precision measurement will be studied in detail. Common mechanical, electronic and chemical instruments will be used to acquire, summarize, analyze, and present data. This first intense hands-on course is good preparation for Industrial Instruments and Techniques 2 (7005) and the student's selected minor courses.

7005 Industrial Instruments and Techniques 2 4
In this course the student moves from basic data acquisition procedures to more advanced, automated ones including computer analysis and presentation. New instruments are introduced. Guest speakers from industry and field trips are utilized to the maximum. On completion of 7005, minor course can be taken with confidence that all basic lab procedures are known and understood.

7006 Environmental Monitoring 4
The United States Environmental Protection Agency (EPA) and other government and non-government environment concerned organizations are interested in protecting the ecosystems of the earth from harmful changes. Because manufacturing and industrial service companies use water, air, and a variety of other chemicals in their processes, the potential exists for dangerous compounds being released into the environment so that humans, animals, plants, and non-living things are altered in a harmful way. In the past, there have been serious abuses.

7012 Engineering Graphics 3
This is a beginning drafting course which studies the principles of sketching, shape description, lettering, dimensioning, sectioning, and pictorial presentation. Included are the theory and drafting of orthographic projection, isometric drawing, electrical schematics, and the drawing of charts and graphs. The student will complete a variety of data presentation-type and engineering type drawings. Computer-aided drafting/design (CADD) will be introduced.

7013 Introduction to Technology 4
This course gives the student an understanding of the disciplines which make up scientific and engineering fields of study. Specifically discussed are physics, chemistry, biology, environmental science; and civil, mechanical, electrical, and industrial engineering. The theory, principles and practices related to the work of a scientific or engineering assistant/aide are introduced. In addition, safety, professional ethics, and use of the scientific calculator/computer as a scientific and engineering tool are studied.

7112 Heating Fundamentals 3
This course covers fundamentals of the heating phase of air flow, temperature measurements, fuels and basic control devices.

7113 Basic Electricity for Air Conditioning 3
Basic electricity, including theory of current flow, Ohm's Law, current voltage and resistance measurements, and use of electrical measuring instruments is covered. Also included are switching circuits, magnetism, transformers, fusing and wire sizing; series, parallel and combination circuits, and an introduction to pictorial and schematic wiring diagrams.

7114 Basic Mechanics and Shop Techniques 3
Safe and efficient use of tools and torches in the installation of copper tubing and copper and steel piping are introduced. The use of soldering, brazing, and oxyacetylene gas welding apparatus in connection with specific materials is included.

7123 Air Conditioning and Refrigeration Fundamentals 3
This is a study of the compression system used in mechanical refrigeration and air conditioning. Refrigeration cycle, compressors, receivers, evaporators, condensers, metering devices, and refrigerants are covered. Also included are temperature conversions, absolute temperature, and gas laws.

7124 Heating Service Gas and Oil 3
This course deals with gas and oil heating units for residential use. Analytical methods for solving mechanical and electrical equipment problems are included. Attention is given to pictorial and schematic diagrams. Prerequisites 7112, 7113, 7114, Corequisite 7135.

7125 Motors and Motor Control 3
Covered are the various types of motors, including single-phase capacitor start and run, shaded pole, tab wound, and 3-phase. How to select the proper motor for a specific application and how to diagnose motor problems. Emphasis on motor control and protective devices are included. Prerequisite 7135.

7126 Air Conditioning and Refrigeration 3
This is a continuation of Air Conditioning and Refrigeration Fundamentals (7123) covering compressors, condensers, receivers, metering devices, evaporators and other system components. This course continues study of mechanical service procedures used throughout the industry. Prerequisite 7123, Corequisite 7135.

7127 Heating Service — Electrical and Hydronic 3
This is a study of electric and hydronic heating systems for residential use and the methods used to analyze electrical and mechanical problems. Included is a study of control systems using pictorial and schematic diagrams. Prerequisite 7135.

7133 Cooling Service-Electrical 3
Service procedures for residential air conditioning systems and low voltage (24 volts) control wiring are covered. Emphasis is placed on schematic and pictorial wiring diagrams. Prerequisite 7113, Corequisite 7135.

7134 Cooling Service-Mechanical 3
This is a continuation of Cooling Service-Electrical (7133). Covered are troubleshooting, procedures for cleaning a system following compressor burnout, suction and liquid line filters and strainer-dehydrators. Prerequisite 7133.

7135 Electrical Circuits and Controls 3
Electrical controls, gas controls, oil controls, cooling controls and system controllers are included. The operation of individual controls and the integration of those controls into control circuits is included. Prerequisite 7113, Corequisite 7133.

7136 Psychometrics 3
Methods of estimating heat loss and gain in commercial and industrial work is studied. Introduced is the use of the psychrometric chart in calculating air qualities and quantities. Emphasis is placed on selection of equipment and on coil, blower, and sizing. Included is a study of ventilation systems. Prerequisite 7143, Corequisite 7137, 7163.

7137 Heat Loss and Gain Calculations 3
Methods of calculating heat loss and gain in sizing of units for residential application are included. Attention is given to methods of reducing energy consumption in residential applications. Prerequisite 7143, Corequisite 7163.

7143 Blueprint Reading 3
The reading of blueprints relevant to the heating and cooling trade is studied. Covered are floor plan elevations, sections, details, plot plans, and mechanical plans. How to make tracings of blueprints and layouts of air conditioning systems are included. Also covers the use of symbols, notations, and schedules on drawings. Emphasis is placed on lettering techniques and neatness and clarity in drafting.

7144 Commercial Refrigeration 3
Light commercial air conditioning and refrigeration systems, including medium and low temperature applications are studied. Refrigeration accessories, metering devices and mechanical and electrical controls are included. Introduced are electrical and hot gas defrost systems. Prerequisite 7125.

7145 Heat Pump Service 3
This is a study of heat pumps used in residential applications. Covered are types of systems, system control, balance points, C.O.P. ratings, and pictorial and schematic diagrams. Prerequisite 7134, Corequisite 7146.

7146 Advanced Cooling System 3
This course covers methods of troubleshooting the electrical and mechanical components of central air conditioning systems. Prerequisite 7134, Corequisite 7145.

7147 Uniform Mechanical Code 2
This is a study of state and local codes and ordinances covering the erection, installation, alteration, repair, relocation, replacement, addition to, use of, and maintenance of any heating, ventilation, cooling, and refrigeration system and their component parts.

7152 Air Balancing 2
Measuring air flow in heating, air conditioning, ventilation and exhaust systems, use of the instruments utilized in this work are studied. The effect of duct sizing on fan brake horsepower, air velocities, and noise control will be included. Air balance reports will be filled out. Prerequisite 7163, Corequisite 7155.

7153 Advanced Commercial Refrigeration 3
This is a continuation of Commercial Refrigeration (7155), including work with heavy commercial equipment. Metering devices, accessories, and advanced control arrangements are included. Stressed are trouble diagnosis and safety precautions in dealing with refrigerants and heavy equipment. Prerequisite 7144.

7154 Duct Fabrication and Installation 3
This is a study of layout and fabrication of ducts and fittings. Also covered is the use of sheet metal hand tools and shop equipment.

7155 Specifications and Estimating 3
This course studies the use of job and equipment specifications, blueprints and engineering data to stake-off a job and determine the cost of materials, labor, and equipment. Overhead, job related costs, labor costs plus fringes, warranty coverages, tax, permits, subcontracts, markups and margins, and estimating of service and maintenance contracts are included. Prerequisite 7136, Corequisite 7152.

7162 Specialized Environmental Systems 3
This study covers specialized environmental systems, including heat pumps of all types and solar, electrohydronic, heat conservation, heat recovery, and temperature and humidity control systems. Prerequisite 7136, Corequisite 7155.

7163 Air Distribution System Design 3
Methods used to size cutwork for residential applications are studied. Students will make working drawings of various types of duct systems. Prerequisite 7143, Corequisite 7136, 7137.

7165 Advanced Electrical Controls 3
This course studies more complex control systems than those found in the average residential or single-zone commercial installation. Included are electronic and solid-state controls, zoning control, modulating controls used in larger systems, refrigerant flow, heat recovery and economizer control arrangements. Prerequisite 7125.

7174 Service Organization and Management 3
This is a study of the operation of a service department, including taking service calls and dispatching servicemen, personnel recruitment and training, truck maintenance, stocking and routing of trucks, handling of service tickets, pricing procedures, collection practices, warranty parts and procedures, service department overhead, customer relations, advertising costs, and service contracts.

7175 Equipment Sales 3
Sales engineering as a profession is studied. Sales techniques and procedures, the role of manufacturers' representatives, marketing through written quotations and proposals, the formulation and writing of service contracts and compensation plans for salesmen are included.

7176 Applied Design 4
Complete air conditioning systems through analysis of a given job, including calculation of heat losses and gains, selection of equipment and layout distribution systems, preparation of working drawing, and determination of operating and maintenance costs are studied. Design and sizing of refrigerant piping, cooling tower piping and chilled water-hot water piping are included. Prerequisite 7528, Corequisite 7152.

7310 General Print Reading 4
The fundamental working drawings used in the trades and crafts are studied. Emphasized are the recognition of various types of working drawings and developing interpretational skills.

7320 AC/DC Fundamentals 3
Studies electrical laws and principles pertaining to AC and DC circuits. Includes current voltage, resistance, power, inductance, capacitance, and transformers. Prerequisite 8203.

7321 Wiring for Industry 3
Introduces wiring methods and materials in conformance with the National Electric Code (NEC). Presents fundamentals of mechanical & electrical installations with emphasis on tool use and material selection. Prerequisite 7320.

7322 Construction Basics 3
Studies the use of various types of construction tools. Emphasis is placed on safety, maintenance, and application of carpentry, masonry, electrical and plumbing principles.

7323 Heating and A/C Basics 3
Studies the fundamentals of heating and compression systems used in mechanical refrigerations and air conditioning. Attention given to combustion process, heat flow, temperature measurement and gas laws. Covers heating and refrigeration cycles and components used in systems. Introduces basic mechanical service procedures used throughout industry.

7324 Industrial Safety 2
Provides students with sufficient safety information so that program courses may be taken without accidents or incidents. Informs students on appropriate first aid measures so that if an accident does occur proper action can be taken. Presents detailed information on industrial accident prevention, so that students are immediately prepared to practice procedures in their employment.

7331 Industrial Machine Electrical Circuits 3
Fundamental single and three-phase alternating current including parallel circuits, resistance, inductance, switching, fusing, current requirements, transformer applications, and motors and motor controls as applied to machinery diagrams are studied. Discussed are design, wiring techniques, and fabrications of wiring for machines. Prerequisite 7320.

7339 Machine Diagnosis and Repair - Electrical 3
Studies troubleshooting electrical control circuits with emphasis on quickly locating section of circuit containing component troubles. Methods for determining which component is defective are covered. Prerequisites 7320, 7321, 7331.

7340 Machine Maintenance 3
Studies procedures for the removal, repair, and installation of machine components. Demonstrates methods of installation, lubrication practices and maintenance procedures on industrial machinery.

7341 Hydraulic and Pneumatic Principles 3
Covered are principles and functions of fluid power and components. Included is study of terminology and the use of repair of equipment.

7342 Hydraulic and Pneumatic Systems and Repair 3
This is a study of hydraulic and pneumatic systems design and the use of tools in repairing and troubleshooting hydraulic and pneumatic systems. Included are hydraulic and pneumatic valves, oils, gauges, fittings, hoses, and other components. Prerequisite 7341.

7343 Preventive Maintenance 3
This course stresses the importance of preventive maintenance for industrial equipment including lubrication, maintenance procedures, and inspection records. Also studied are the effects of temperature, moisture, and corrosion on stored parts and the effects of speeds, feeds, machine loads, and gearing on machine performance.

7344 Power Plant Mechanics 1 3
Specialized study in power plant mechanics for qualified students is presented.

7345 Power Plant Mechanics 2 3
Advanced study in power plant mechanics for qualified students is presented. Prerequisite 7344.

7348 Millwright 1 4
This course introduces hand and power tools and measuring instruments used in carpentry, rigging, and machine and general shop work. Corequisite 7349.

7349 Millwright Shop 1 3
This course develops proficiency in the use of the trade tools and measuring instruments introduced in Millwright 1 (7348) through work assignments on general shop, machinist, carpentry, rigging, and equipment installation projects. Corequisite 7348.

7350 Millwright 2 4
Introduces machinery and related equipment, including drive components, bearings, pumps, packing and seals, turbines, air compressors, boilers, and mechanical fasteners. Attention is given to the selection and use of lubricants. Prerequisite 7348, 7349, Corequisite 7351.

7351 Millwright Shop 2 3
This course applies mechanical principles to the assembly and disassembly of mechanical equipment, including drive components, bearings, pumps, packing and seals, air compressors, turbines, and other auxilliary equipment. Emphasizes use of maintenance manuals. Prerequisite 7348, 7349, Corequisite 7350.

7352 Troubleshooting Skills 3
This study introduces systematic and logical approaches to troubleshooting. Demonstrated are procedures for both scheduled and unscheduled maintenance.

7367 Programmable Controllers 1 3
Introduces the basic theory, operations and programming of programmable controllers. Prerequisite 7125.

7375   Utilities Distribution Systems   4
The student is introduced to common industrial and residential utilities distribution systems with emphasis on maintenance of these systems and safety precautions associated with these systems as well as local code requirements. Opportunity will be given to trace incoming utilities from their source to their end uses.

7381   Equipment Installation and Rigging   3
Procedures for leveling and aligning equipment and methods and tools for moving equipment of various sizes and shapes are demonstrated. Included are formulas for calculating mechanical advantages and safe working loads for ropes, blocks and tackles, and slings. Also demonstrated is the use of ladders, scaffolds, safety belts, and life nets for use in maintenance work at various heights.

7520   Descriptive Geometry   3
Introduces fundamental principles on how to develop graphical solutions to engineering problems. Areas covered include auxiliary views, successive auxiliaries, true length of lines, true shapes of planes, and edge views of planes. Prerequisite 7581.

7521   Industrial Processes and Systems   3
Offers the student an opportunity to become familiar with manufacturing processes, equipment, selection of materials, and capabilities of modern machine tools. Basic methods of fabrication as well as measurement and gauging devices to ensure their accuracy are also studied.

7522   Production Drawing   3
A continuing course in advanced orthographics with intermediate dimensioning, tolerancing, and typical machining notations; also introduces the student to the various sectioning techniques. Prerequisite 7581.

7528   Drafting for Heating/Air Conditioning   3
Studies lettering, linework, isometric drawing, and layout of ducts, electrical controls and pipes.

7530   Product Drafting   3
An introduction to the "set" concept of working drawings (detail drawings and assembly). Fastening devices, thread symbols and nomenclature, surface texture symbols, classes of fits, and the use of parts lists, title and revision blocks are presented.

7531   Mechanisms and Machines   3
An advanced course introducing the student to graphical layout, analysis and the solution of gear cams, linkages, timing-indexing components, belts, chains, sprockets, ratchets, and other mechanical devices — their mechanical advantage, resultant motion, and mechanical forces involved.

7532   Tool Drafting   3
Familiarizes the student with "tooling;" the jigs, fixtures, and gauges necessary to improve manufacturing efficiency, accuracy, repeatability, and productivity. Tool component catalogs are used extensively.

7533   Die Design   3
Studies the bases of die design as it pertains to the punch press and stamping industry. Standard die sets, hardwares, and other die standards are taught.

7540   Product Design   3
Helps to enlighten the drafting student with regard to good design characteristics, including: need, function, esthetics and economy.

7541   Advanced Tool and Gauge Design   3
Gives the student an opportunity to research and study advanced tooling and gauging practices used in today's automated manufacturing environments. Topics include robotics, LASERs, CAD/CAM, and many other automated manufacturing technologies.

7543   Technical Illustration   3
Examines the use of isometric and oblique pictorial drawings. From basics learned, the student then is instructed on how to illustrate a multi-part assembly in an "exploded" pictorial drawing. Basic methods of shading are also introduced. Prerequisite 7581.

7552   Strength of Materials   3
The basic design principles of various materials and their reactions to loads and conditions involving mathematical calculations are studied.

7557   Jig and Fixture Design   3
In this course the student will be challenged to solve a jig/fixture problem from its beginning stages. The course emphasizes the use of standard purchasable hardwares and design economy as a means to a justifiable solution.

7558   Sheet Metal Drafting   3
Provides the drafting student an opportunity to apply Descriptive Geometry development skills in the solution of 3-D sheet metal forms. Prerequisite 7581.

7573   Industrial Design Presentation   3
A challenging course which provides the student an opportunity to utilize all previously acquired knowledge in product drafting to the design of a new or existing consumer product. The student will consider the function, esthetics, cost economics and marketability of the product.

7574   Industrial Design Detail   3
A continuation of 7573.

7575   NC Data Processing   3
An introductory course in programming, alpha codes, tape punching, and coordinates as they relate to CNC machine tool equipment.

7578   Piping Fundamentals   3
Introduces the student to industrial piping terminology, symbols, and standards while learning to develop plan/elevation drawings, fabrication isometrics, and spooling details.

7581   Drafting Fundamentals   6
Introduces the beginning drafting student to equipment usage, lettering, sketching, dimensioning fundamentals, geometric constructions, and multiview projection drawings.

7593   CAD/CAM   3
This is an advanced course in CAD in which the student learns to develop tool path routing. Emphasis is on coordinate layout, layering of sub routines, and cycle statements.

7710   Machine Tool Introduction   3
This is an entry level course giving the student a comprehensive introduction to basic machining practices. Turning, drilling, reaming and boring operations are included in the exercise.

7711   Machining Fundamentals 1   3
The milling machine and related operations are introduced in this course. Along with related theory, students will machine a workpiece which will include squaring, layout, drilling, reaming and boring operations.

7712   Machining Fundamentals 2   3
This is an advanced course in lathe operations. Applied shop math is utilized in the inspection of a workpiece which includes paper turning and thread cutting. Prerequisite 7710.

7725   Interactive Numerical Control Machining   3
In this course the student experiences hands-on programming challenges where he processes, programs, and machines a workpiece using a CNC vertical milling machine. Operations include Hurco executive CNC programming cutter compensation, deep hole drilling and tapping cycles. Prerequisite 7758-7759.

7731   Basic Print Reading   3
Machine shop blueprints are read and interpreted relative to dimensions, shapes, machining operations, fabrication and assembly. Basic mathematics is applied in solving shop problems. Students learn to make sketches on the job without instruments and become familiar with screw thread notations and welding symbols.

7733   Advanced Machine Tool Set-up and Operation   3
The student builds a mechanism from an assigned print and process sheet. All previously acquired machining skills are used in the course while completing this project.

7734   Advanced Print Reading   3
In this course, the emphasis in content is on the various types of drawings that can be used to represent parts to communicate information in the most economical and precise way possible.

7740   Specialized Machining Theory   3
This course teaches or reviews the effective methods of using any reference volume. This skill provides some substitute for the years of experience that aid the skilled craftsman.

7758   Numerical Control and Automatic Processing 1   3
This is an introductory course teaching basic NC/CNC skills aimed at the operator level. The student prepares, reads, and runs simple programs in both E.I.A. and ASCII systems. The student machines a workpiece from a proven program utilizing the editing capabilities of the machine to produce preassigned dimensional sizes.

7759   Numerical Control and Automatic Processing 2   3
This course acquaints the student with programming skills involving geometric and trigonometric functions. Five weeks of the eleven class weeks are devoted to intensive applied shop geometry and trigonometry review. Prerequisite 7758.

7760   Numerical Control and Automatic Processing 3   3
This course advances the programming skills of the student and includes turning as well as milling operations. Prerequisite 7759.

7762   Precision Measurement   3
Demonstrates techniques of linear and angular measurement, methods of application, and uses of precision measurements in machine tool production and quality control.

7769   Numerical Control and Automatic Processing 4   3
This advanced course deals with three-axis programming, jump, loop and sub-routines, threading and grooving in both turning and milling operations. Prerequisite 7760.

7913   Introduction to Environmental Controls   4
This course presents a general introduction to the entire pollution problem relating each type of pollution, including water, air, solid waste, population, radiation and noise to each of the others. The global environmental dilemma confronting mankind and man's impact on the earth's vital resources are discussed.

7915   Applied Chemistry 1   3
This study consists of an intensified laboratory training program in proper performance of various chemical analyses for awareness of tests and procedures necessary to comply with State and Federal wastewater effluent standards with tests including: DO, TBOD, CBOD, pH, suspended solids, ammonia, phosphorus and chlorine residual plus sampling technique and flow measurement. Prerequisite 7954.

7916   Environmental Seminar   1
Familiarization of the student with current events in the environmental field is the primary objective of this course. The class will discuss articles submitted by class members and the instructor.

7926   Applied Chemistry 2   3
This course is a continuing study of the water/wastewater laboratory including procedures on nitrates, phosphates, grease, oil, cyanide, phenols and heavy metals. Prerequisites 7915, 7954.

7934   Basic Hydraulics   4
This course is an introduction to the collection system for a wastewater pollution control facility. The survey lines are looked at as well as the manhole installation, cleaning apparatus, maintenance and lift stations for the uninterrupted movement of the wastewater are discussed. Prerequisites 8204, 8203.

7942   Applied Microbiology   3
Laboratory training is given in the areas of applied water and wastewater microbiology including milk, food, total and fecal coliform, total plate count and inspection of milk and other foods. Prerequisites 8307, 7975.

7943   Water Supply and Treatment   4
This course studies the basic principles of water purification including coagulation, sedimentation, chlorination, treatment chemicals, taste and odor control, bacteriological control, mineral control, design criteria, maintenance programs and operational programs. New processes and recent developments will be discussed. Prerequisites 8307, 8203.

7945   Equipment and Maintenance 1   3
Electrical terminology, schematic diagrams and circuits as used by technicians will be studied. Students will learn how to diagram and assemble series, parallel and combination circuits, take measurements of electrical values and make basic computations for electrical values in series and parallel resistance circuits.

7946   Applied Research 1   2
Each student enrolling in this course is expected to research an area of interest in environmental science and then write a paper on the study. The paper must include the elements of a proper research paper, be typewritten and presented to the class.

7951   Reporting and Purchasing   2
Training is given in writing job-related reports and letters. Students experience library research and preparation of specialized business forms such as proposals, letters, and abstracts.

7952   Management and Supervisory Procedures   3
Studies employee development, with emphasis upon the responsibilities of the beginning or newly appointed supervisor. Includes functioning within an organizational structure, communications, motivations, delegation of authority, interviews, orientation and induction, evaluation of new employee performance.

7954   Plant Operations 1 - Municipal   4
This is a study of the basic principles of municipal wastewater treatment including pre-treatment, primary, secondary and advanced treatment. Discussion topics will include disinfection, sludge handling, design parameters and plant control.

7956   Applied Research 2   3
This course consists of students researching an area of interest in water pollution, experiencing an operating plant and presenting a paper regarding the research.

7957　Community Sanitation　3
The control of the environment can lead to the protection of human health and the promotion of human comfort and wellbeing. Topics discussed will include communicable diseases, solid wastes disposal, milk and food sanitation, disinfectants, insect vector and rodent control, institutional sanitation and occupational health. Field trips are planned.

7958　Equipment and Maintenance 2　3
Various pumps used in wastewater treatment will be studied with emphasis on operation and maintenance. Students will be able to identify, disassemble, describe internal parts, explain their function and reassemble pump properly in a scheduled length of time.

7960　Air Pollution Control 1　4
Fundamentals of air pollution control, including history, effects, air pollutants, sources, meteorology, basic thermodynamic concepts and air quality criteria are presented. Discussion of industrial problems and government regulation, inspection and enforcement follows.

7961　Plant Operations II - Municipal　3
This course reviews the basics of municipal wastewater treatment and then continues to include the special processes of advanced wastewater treatment. Emphasis will be placed on ammonia and phosphorus removal, process control, filtration, disinfection and coagulation.

7963　Plant Operations III - Industrial　3
The special problems of industrial wastewater treatment are studied with emphasis on major classifications of liquid industrial wastes including neutralization, equalization, proportioning and removal of troublesome solids. Cyanide and chromium treatment will be discussed.

7964　Plant Mathematics　4
This course reviews and emphasizes performance in basic mathematical skills: whole numbers, fractions, decimals, percents, ratio and proportion, measurements, graphs, english and metric systems, and averages. Basic math is applied to typical wastewater plant and laboratory calculations as found in the field. Prerequisite: 7954.

7966　Hazardous Materials　2
This is a study of explosive, combustible, corrosive, toxic and radioactive substances and the basic chemistry of dangerous reactions.

7967　Occupational Orientation　2
This course is designed to develop environmental awareness through intensive monitoring of all communications media, with guest speakers and films introducing students to opportunities in the environmental fields of wastewater, water, air, health, noise, etc., developing concern, involvement and knowledge of environmental problems and career opportunities through group discussion.

7970　Air Pollution Control 2　3
This is a continuation of course 7960. Theory and laboratory techniques for ambient air quality sampling and source sampling are studied including sample collection, equipment used for collection, maintenance of laboratory equipment, calculation and interpretation of results. Prerequisites 7960, 8203, 7913.

7972　Environmental Administration　4
A study of the structure of present decision-making, including federal, state, local governments and the private sector, relative to the environment is made. Environmental law is introduced.

7973　NPDES Workshop　2
This course consists of an intense look at the NPDES Permit, how to apply for a permit, who must have a permit, what a permit means, and what waivers are available for a set of permit conditions. The responsibilities of the operator are studied.

7974　Phosphorus Removal Workshop　2
Students will become aware of the importance of phosphorus removal and the skills to calculate the amount of chemicals to be used and methods of application in order to effectively operate a system for phosphorus removal.

8001　Gas Welding 1　3
Offers instruction in oxyacetylene welding, including gas welding techniques, brazing, and flame cutting.

8010　Arc Welding 1　3
Demonstrates the welding of ferrous metals and alloys using shielded metal arc methods, single and multipass techniques, and flat and horizontal positions. Emphasis is placed on safe practices.

8013　Blueprint Interpretation　3
Studies interpretation of blueprints pertaining to the welding trade. Attention given to metal structures, specifications and assembly drawings, special forms of dimensioning, and section views.

8024　Welding Blueprint Interpretation　3
Presents advanced study of blueprint interpretation, concentrating on welding symbols and their significance in the welding trade. Includes process and finish symbols and methods of finish.

8061　Pipe Welding 1　5
This course extends the student's welding skills as necessary to make high quality welds on open root mild steel pipe in 2G, 5G, and 6G positions using the SMAW process. Prerequisite 8095.

8063　Electrical Fundamentals for Welders　3
This is a study of the relationship between voltage, current and resistance in electrical circuits, with emphasis on the use of high current transformers in AC and DC circuits. Special emphasis is placed on the production of heat as a result of current flow through resistance. Also, safety is emphasized when working with electrical components.

8064　Basic Metallurgy　3
Introduced are the properties and uses of ferrous and nonferrous metals and alloys; the production of iron and steel; composition and properties of plain carbon steel and alloying elements; selection of tool and case hardening steels; and destructive and nondestructive testing. Also included are the fundamentals of heat treatment and reaction that occur in metals subjected to various heat-treatment methods and techniques.

8066　Introductory Welding　3
Covers gas and arc applications for occasional users from other trade areas.

8075　Welding Fabrications 1　5
Basic fabrication covers interpreting blueprints and welding symbols, principles of layout and measurement used in fabrication of metal products, including tolerances, fits and allowances. Prerequisite 8097, 8024.

8090　Shielded Metal Arc Welding 1　5
The student is provided with a thorough technical understanding of arc welding fundamentals, welding safety, electric power sources, electrode classification and selection. The course also includes training to develop the manual skill necessary to make high quality shielded metal-arc welds in three positions on mild steel.

83

8095   Shielded Metal Arc Welding 2   5
Training to develop the manual skills necessary to produce quality multipass fillet and groove welds with backing in all positions is provided. This course is designed to use the E6010 and 7018 electrodes on thick carbon steel plate similar to many structural applications. Prerequisite 8090.

8097   Gas Tungsten Arc Welding (TIG HELI-ARC)   5
The student is provided with a thorough technical understanding of gas tungsten arc welding fundamentals, arc characteristics and welding safety. Training to develop the manual skill necessary to make quality gas tungsten arc welds in all positions on mild steel, stainless steel and aluminum is included.

8098   Welding Certification   4
This course is designed for the student who has advanced shielded metal-arc welding skills. This course will concentrate on preparing the student for the A.W.S. Certification Test. Prerequisite 8095.

8099   Oxyacetylene Welding and Cutting   5
In this course the student is provided with a thorough technical understanding of oxy-acetylene welding, flame cutting, brazing fundamentals and welding safety. Training to develop the manual skills necessary to produce high quality welding and cutting techniques is included.

8501-06   Field Study/Co-op Education   5
The student is given a job assignment related to their Information/Data Management career objectives and/or specialty. The course should be a field project within the framework of actual work experience in industry or business.

General Education: Communications/Social Science

8110   Communications   4
Develops writing competence. Emphasis is on development of multi-paragraph compositions through common rhetorical modes such as narration, description, illustration, comparison and contrast, and classification. A grammar review and in-class written assignments are also required. Meets the requirement for communications credit for most A.A.S. programs.

8111   Business Communications   4
Stresses effective written communication with emphasis placed on such topics as types of letters and memoranda found in business environments: research techniques; and the organization, structure and format of business reports. Prerequisite: A grade of C or higher in 8110.

8113   Oral Communications   4
Improves oral communication skills and formal oral presentations. Students are required to present formal speeches — demonstrative, informative, persuasive — and participate in a panel discussion. In addition, in-class presentations and evaluation exercises are required.

8114   Technical Report Writing   3
Enables students to understand and use fundamental principles of written communications within technical environments.

8117   Effective Listening   2
Focuses on the process of listening. Topics include: active listening and concentration, listening techniques, and overcoming barriers.

8118   Effective Reading   2
Increases reading speed while maintaining or improving comprehension and retention. Analyzes the student's present reading ability and demonstrates techniques for achieving greater efficiency and effectiveness.

8401   Human Relations   4
Helps students improve human relations skills in their personal and professional lives. Topics include learning, motivation, interpersonal communication, problem solving and adjustment. Meets Social Science requirement for most A.A.S. programs.

8402   Applied Behavioral Psychology   4
Provides a study of life span and developmental psychology. Presents facts, dominant theories, recent research and a cross-cultural perspective of various life stages.

8405   Social Problems   4
Provides a fundamental background in sociological topics and emphasizes how problems can arise in pluralistic societies. Topics focus on personal, social and institutional factors that create problems.

General Education: Mathematics/Science

8201   Applied Mathematics 1   4
Reviews fractions, decimals, and percents. Studies integers, equations, variation, measurement and formula evaluation.

8202   Applied Mathematics 2   4
Continues the study of mathematics with emphasis on geometric terminology and rules, construction, area, volume, Pythagorean Theorem, instrumentation, statistical graphing, and right triangle trigonometry. Prerequisite: 8201 (C grade or higher).

8203   Technical Mathematics 1   4
Reviews integers, linear equations and polynomials. Studies scientific notation, accuracy, precision, measurement, systems of equations and determinants, geometric formulas, angle measure, linear and polar coordinates, trigonometric functions and right triangle trigonometry. Prerequisite: 2 years high school algebra and/or 8223 (C grade or higher).

8204   Technical Mathematics 2   4
Continues with the study of oblique triangle trigonometry, factoring, algebraic fractions, complex and irrational numbers, quadratic equations, variation, logarithmic equations, and graphing of linear, trigonometric, conic, and logarithmic functions. Prerequisite: 8203 (C grade or higher).

8206   Technical Calculus 1   4
Introduces analytic geometry and differential and integral calculus with emphasis on practical application. Prerequisite: 8204 (C grade or higher).

8208   Geometry   3
Studies geometric topics such as fundamental terminology, scales and scale drawings, lines, triangles, circles, mensuration, congruent and similar figures, polyhedrons, spheres, cylinders and cones.

8209   Trigonometry   3
Studies angle measure, trigonometric functions, use of trigonometric tables and scientific calculators, right triangle and oblique triangle trigonometry, and graphing of trigonometric functions. Prerequisite: 8203 (C grade or higher).

8210   Statistics   3
Studies the collection, interpretation and presentation of descriptive statistics, measures of central tendency, probability, binomial and normal distributions, and hypothesis testing of one- and two-sample populations. Prerequisite: 8203 (C grade or higher).

8212   Business Mathematics   4
Reviews equations and percents with emphasis on applications. Studies reconciliation of bank statements, simple interest, commission, taxes, payroll, discounting paper, credit purchases, installment buying, interest rebate, and metrics.

8213   Mathematics of Finance   4
Studies merchandise pricing, compound interest, insurance, depreciation, inventory, analysis of financial statements, statistical graphing, measures of central tendency, and number bases other than ten. Prerequisite: 8212 (C grade or higher).

8227   Computer Mathematics Topics   4
Introduces algorithms, flowcharting, set theory, symbolic logic, Boolean algebra, computer number systems and algebraic application.

8301   Physical Science   3
Introduces non-mathematical study of the principles of energy such as motion, work, and power, electricity and magnetism, heat, nuclear power, and other energy sources. Studies the use of energy and its effects on the environment and the human population.

8304   Physics 1   3
Presents vectors, static equilibrium, Newton's Laws, applications of work, force, power, kinetic and potential energy, circular motion, momentum, simple machines, elasticity and Hooke's Law, pressure, Archimedes' Principle, flow and Bernoulli's equation. Prerequisite: 8209 (C grade or higher).

8305   Physics 2   3
Studies temperature, thermal expansion, gases, heat and heat transfer, laws of thermodynamics, vibrations and waves, sound, electrical forces and fields, electrical energy, current, resistance magnetism, direct and alternate currents, reflection and refraction of light, mirrors and lenses, and wave optics. Prerequisite: 8204 (C grade or higher).

8307   General Chemistry   3
Studies the forms and reactions of matter, periodic table, atomic structure, bonding, equilibrium, acid-base chemistry, solutions and gas laws. Chemical nomenclature, calculations and stoichiometry are emphasized.

8308   General Microbiology   3
Introduces the fundamentals of microbiology. Includes morphology and classification of microorganisms, control of microoganisms, pathogenicity and host defense, and discussion of bacterial and viral diseases of man.

8310   General Biology   4
Studies classification and chemistry of life forms, cells, structures of plants and animals, human sexuality, genetics, evolution, ecology and behavior.

Skills Advancement: Communications/Social Science

8151   Introductory Writing 1   4
Offers much practice in writing, leading from workbook practice to paragraphs on positive, personal experiences. Some lecture and much individualized tutoring. Students learn by practice rather than by rules.

8152   Introductory Reading 1   4
Encourages students to develop alternative reading strategies with general reading material. Includes vocabulary development and stresses improvement of comprehension. Class structure includes individual assignments and lecture/discussion activities.

8153   Introductory Reading 2   4
Provides vocabulary development and practice with reading/learning techniques associated with content materials. The student will participate in individual, small group and lecture/discussion activities.

8154   Introductory Reading 3   4
Corequisite — A program level course in the student's chosen field. Develops reading strategies that are directly applicable to a program level course. The student will concentrate on reading/learning activities designed to assist the translation into program classes.

8159   Improving Your Handwriting   1
Improves the student's ability to write legibly. Includes individual diagnosis of penmanship faults, demonstration of handwriting techniques, and guided practice.

8160   Introductory Writing 2   4
Continuing 8151, students practice advanced verb forms through extensive varied workbook practice. Slowly through step-by-step exercises they master advanced sentence forms and subordination in self-generated paragraphs. Emphasis on individualized tutoring.

8162   Spelling   2
Independent study using a programmed text. The content of the course will be structured to develop application of rules.

8163   Learning Development   4
Designed to improve reading comprehension, vocabulary and logical thinking skills.

8164   English as a Second Language Level 1*   4
Focuses on basic English Grammar for foreign students who have little experience in English. Structures and vocabulary geared toward beginning students.

8165   English as a Second Language Level 2*   4
Focuses on key structures through varied and extensive exercises for foreign students who are lower-intermediate and intermediate. Promotes situationally appropriate language use.

8166   English as a Second Language Level 3*   4
Focuses on English grammar for foreign students who are advanced. Presents forms, meanings and usage level (colloquial through formal) of basic structures in English. Exercises range from simple manipulation to situational and idiomatic usage, from controlled response to open communicative interaction.

*In addition, Special ESL sections are offered for all skills advancement language courses.

8167   Language Skills Development   4
Designed to strengthen the ability to identify and write complete sentences. Emphasis is also placed on dictionary usage, spelling and word study.

8169   Critical Thinking   4
After becoming familiar with such thinking tools as recognition of patterns, cause-and-effect relationships, and considering alternatives, students focus their newly developed thinking skills on selecting appropriate career programs suited to their interests and abilities.

8170   Introductory Speech   4
Designed to help the student become more comfortable and effective in the use of oral language as a communication skill.

Skills Advancement: Mathematics

8223   Pre-Technical Mathematics 1   4
Studies integers, linear equations, linear inequalities, monomials, polynomials, factoring, irrational numbers, quadratic equations, systems of equations in two unknowns and graphing linear equations.

8224   Pre-Technical Mathematics 2   4
Introduces basic geometric terminology, angle measurement, construction, formula evaluation, Cartesian and polar coordinates, trigonometric functions and simple applications of right triangle trigonometry.

8266   Mathematics Skills   4
Reviews arithmetic operations of whole numbers, fractions, and decimals, mathematics study skills, and verbal applications.

8269   Intermediate Mathematics Skills   4
Reviews ratio, proportion, percent conversions, percentage equation, verbal applications, and measurement.

8272   Mathematics Skills Development   4
Allows student to follow an individualized education plan (IEP) in the development of pre-mathematics and basic mathematics skills.

9305   Technical Mathematics for Health Occupations   5
Offers basic instruction in technical mathematics for students in health occupations. Includes review of arithmetic, basic concepts of algebra, graphing geometry, and logarithms.

9310   Pharmacology   6
Introduces the student to the art and science of meeting biological, psychological, and sociological aspects of man through administration of pharmacologic agents within the preventative, therapeutic and rehabilitative environment. It includes the responsibilities of the Licensed Practical Nurse in the administration of pharmacologic agents. It uses the nursing process to determine patient status on the wellness/illness continuum.

9322   Biophysics for the Health Occupations   2
Studies Basic concepts of physics and their applications in the health field. Emphasis is placed on problem solving and practical applications of theoretical material.

9350   Medical Law and Ethics   2
Studies the ethics of medicine and medical practice, with attention to the legal requirements and implications for professional and medical practices and personnel.

9353   Anatomy and Physiology 1   4
Presents structure and function of man; it systematically examines the physical and chemical factors that enable man to interact with his environment. Fundamental wellness/illness relationships are integrated.

9354   Anatomy and Physiology 2   4
Presents structure and function of man; it systematically examines the physical and chemical factors that enable man to interact with his environment. Fundamental wellness/illness relationships are integrated.

9355   Medical Terminology   2
Presents basic terminology required of all paraprofessionals in the health occupations. Also includes terminology specific to the student's area of specialization.

9356   Disease Conditions   3
Presents basic concepts concerning disease, its causes, and the resulting changes in body functions. Emphasis is placed on functional disturbances and the correlation of patient symptoms with emergency and in-patient treatment.

9358   Pharmacology   3
Introduces the principles of pharmacology. Studies classifications of drugs, dosages, interactions, and incompatabilities. Covers drug administration, weights and measurements, and methods of preparation, with attention to legal aspects and special precautions.

9359   Cardiopulmonary Resuscitation   1
Develops proficiency in mouth-to-mouth, mouth-to-nose, and mouth-to-stoma breathing.

9411   Mechanical Drawing 1   3
The fundamentals of drafting, including interpretation of lines, view positions, conventions and standard signs, symbols and abbreviations, use of instruments, simple geometric constructions, orthographic projections, scaling and dimensioning are introduced.

9441   Shop Mathematics 4   3
Studies geometrical terms, axioms, theorems, and propositions pertaining to straight lines, triangles, and circles. Emphasis is placed on practical applications to shop problems.

9413   Building Trades Blueprint Reading   3
This course is designed to provide basic skills in residential building prints. All signs, symbols, scales, dimensions and abbreviations will be interpreted and converted to useful information.

9472   Computer Programming for Technicians   3
This course is an introduction to the architecture of a modern computer with emphasis on hardware and various software. Terminology is stressed. The hands-on approach is taken.

9524   C Programming   5
Provides a working knowledge of C Programming language and its applications to business data processing. C is a powerful, general purpose, structured language designed originally to run on computers utilizing the UNIX operating system. Lab assignments include coding, debugging and testing C language programs.

9525   UNIX V Operating System Fundamentals   3
Studies the UNIX Operating System and its use as a powerful time-sharing system. Includes basic UNIX commands, use of the visual editor, the UNIX directory structure and file management with SHELL commands. Offers opportunities to apply skills and knowledge in a laboratory situation.

PROGRAM LOCATOR CHART

	Ivy Tech Region												
	1	2	3	4	5	6	7	8	9	10	11	12	13
DIVISION OF BUSINESS, OFFICE AND INFORMATION SYSTEMS TECHNOLOGIES													
Accounting	X	X	X	X	X	X	X	X	X	X	X	X	X
Information/Data Management		X	X		X	X	X	X	X	X	X	X	X*
Computer Programming	X	X	X	X	X	X	X	X	X	X	X	X	X
Distribution Management								X					
Hotel/Motel Management								X					
Statistical Process Quality Control			X		X	X	X	X		X			
Industrial Supervision		X	X	X		X		X				X	
Marketing	X		X		X	X	X	X				X	
Paralegal								X					
Quality Control								X					
Secretarial Sciences/Word Processing	X	X	X	X	X	X	X	X	X	X	X	X	X
Small Business Operations Mgmt.	X	X	X	X		X	X	X	X	X		X	X

*Courses only

	1	2	3	4	5	6	7	8	9	10	11	12	13
DIVISION OF VISUAL COMMUNICATIONS TECHNOLOGIES													
Audio Visual Communications		X											
Commercial & Industrial Photography		X					X			X		X	X
Commercial Art		X								X		X	X
Interior Design		X			X							X	
Library Resource Aide													
Printing							X						

	1	2	3	4	5	6	7	8	9	10	11	12	13
DIVISION OF HUMAN SERVICES AND HEALTH TECHNOLOGIES													
Child Care			X	X		X		X					
Culinary Arts	X		X					X					
Dental Assistant				X		X							
Dietary Manager		X	X	X									
Food Services									X				
Human Services								X					
Medical Assistant	X	X	X	X	X	X	X	X		X	X	X	X
Medical Laboratory Technician		X					X						
Mental Health Rehabilitation			X			X							
Associate Degree Nursing (ADN)		X		X					X			X	
Practical Nursing	X	X	X	X			X	X	X	X	X	X	X
Radiologic Technology							X	X					
Respiratory Therapy	X		X	X				X					
Surgical Technician	X			X				X				X	

	1	2	3	4	5	6	7	8	9	10	11	12	13
DIVISION OF APPLIED SCIENCE AND TECHNOLOGIES													
Agricultural Equipment				X									
Applied Fire Science	X		X	X				X					
Architectural Drafting		X			X		X	X		X			
Auto Body Repair	X			X	X	X	X	X			X		X
Automated Manufacturing Technology	X	X	X	X	X	X	X	X	X	X	X	X	X
Automotive Service	X	X	X	X	X	X	X	X	X	X	X	X	X
Building Construction			X		X	X			X				X
Diesel Power		X		X									X
Electronics Technology	X	X	X	X	X	X	X	X	X	X	X	X	X
Heating, Air Conditioning & Refrigeration	X	X	X	X	X	X	X	X	X	X		X	X
Industrial Drafting	X	X	X	X	X	X	X	X		X			X
Industrial Maintenance	X	X	X	X	X	X		X	X			X	X
Machine Tool	X	X	X	X	X	X		X	X				X
Plastics Manufacturing		X											
Pollution Treatment	X												
Surface Mining Operation							X						
Welding Technology	X	X	X	X		X	X	X	X		X	X	X
Industrial Lab Technology							X	X					
Statistical Process Quality Control							X					X	

Full-Time Faculty

Applied Science and Technologies

Duane Alfrey, Instructor (Welding Technology). Certification: American Welding Society.

Michael Baker, Instructor (Auto Body Technology). Certification: Automotive Service Excellence.

Arthur Bensheimer, Instructor (Chairperson, Automotive Service Technology). B.S., Indiana State University .

Huey Calvain, Senior Instructor (Program Coordinator, Welding Technology). Certification NOTCI (National Occupational Testing Competency Institute), and American Welding Society.

Michael DeBourbon, Master Instructor (Department Chairperson, Manufacturing Technologies). B.S., Southern Illinois University; M.S., Indiana University .

James G. Feller, Instructor (Automotive Service Technology). B.S., Indiana State University .

William T. Flanigan, Instructor (Chairperson, Heating, Air Conditioning and Refrigeration Technology Program). B.S., Tri-State University .

Janet Foster, Assistant Instructor (Architectural Drafting Technology). A.A.S., Indiana Vocational Technical College .

Charlene Givens, Instructor (Chairperson, Pollution Treatment Technology and Industrial Maintenance). B.A., Indiana University.

Michael Hall, Instructor (Chairperson, Automated Manufacturing Technology). B.S., Purdue University; M.S., Purdue University.

James Holder, Instructor (Applied Science and Technology). B.A., Indiana University.

Larry E. Hoskins, Instructor (Chairperson, Applied Fire Science). B.S., Southern Illinois University; A.A.S., Indiana Vocational Technical College.

Robert Howell, Master Instructor (Department Chairperson, Technical Services Department). B.S., Purdue University .

Kenneth King, Master Instructor (Chairperson, Industrial Laboratory Technology). A.B., Indiana University; M.S., Indiana University-Purdue University at Indianapolis; Certificate in Meteorology, St. Louis University .

Stephen Kuchler, Senior Instructor (Electronics Technology). B.S., Purdue University .

James McFarland, Master Instructor (Chairperson, Architectural and Industrial Drafting Technology). B.S., Indiana State University.

Edward Mackell, Master Instructor (Program Coordinator, Machine Tool Technology). A.A.S., Indiana Vocational Technical College.

David E. Miller, Master Instructor (Electronics Technology). B.S., Purdue University; M.S., Indiana University.

Ishman Moorman, Instructor (Industrial Maintenance Technology). A.A.S., Purdue University; B.S., Purdue University .

Jon Myntti, Senior Instructor (Electronics Technology). B.S., North Dakota State University ; M.S., North Dakota State University .

James Pettit, Instructor (Heating, Air Conditioning and Refrigeration Technology).

Haazim Sabree, Instructor (Applied Science and Technology). B.S., Florida A&M University.

Owen Sensenbrenner, Instructor (Industrial Maintenance). B.A., Indiana State University; M.S., Indiana State University.

John M. Sollman, Master Instructor (Divisional Chairperson, Applied Science and Technologies). B.S., Ball State University; M.A., Ball State University.

Norman Tunison, Senior Instructor (Program Coordinator, Automotive Body Repair Technology). Certification: Automotive Service Excellence and Inter-industry Conference on Auto Collision Repair.

Division of Business, Office and Information Systems Technologies

Sakinah Abdulbaaquee, Instructor/Counselor. B.S., Pennsylvania State University.

Russell E. Bankert, Master Instructor (Department Chairperson, Management Services). B.S., Illinois State University.

Jeff Baron, Instructor (Business and Management). B.A., Indiana University-Purdue University at Indianapolis.

James Beeler, Master Instructor (Business and Management). A.B., Indiana University; M.S., Butler University.

Bernadette Cinkoske, Instructor (Computer Programming Technology). B.A., Indiana University.

Marvin L. Daugherty, Master Instructor (Chairperson, Computer Programming Technology). A.A.S., Indiana Vocational Technical College ; B.S., Martin Center College.

Sue Easterday, Instructor (Chairperson, Information/Data Management). B.S., Miami University at Oxford.

Jennifer Graham, Instructor (Chairperson, Paralegal Technology). J.D., Indiana University School of Law; B.B.A., Walsh College.

Harry E. Gray, CPA, Instructor (Accounting Technology). B.S., Butler University.

William L. Greathouse, Instructor (Chairperson, Hotel/Restaurant Management and Culinary Arts). B.S., Purdue University; A.A.S., Purdue University; Certification: Front Office Executive; Rooms Division Executive .

Joanna Head, Instructor (Secretarial Sciences). B.S., Butler University; M.S., Butler University.

Charles Highbaugh, Instructor (Chairperson, Quality Control and Industrial Supervision). B.S., Indiana State University.

Debra Leverette, (Chairperson, Secretarial Sciences). B.S., Ball State University; M.S., Indiana University.

Susan Mannan, Master Instructor (Chairperson, Library Resource Aide Program, and Coordinator, Learning Resource Center). B.A., Heidelberg College; M.S., Indiana University .

Alan Rowland, Instructor (Information/Data Management). B.S., Ball State University.

Linda L. Scott, Senior Instructor (Department Chairperson, of Administrative Services). A.A.S., Ball State University; B.S., Ball State University; M.A., Ball State University.

Jan Strietelmeier, Instructor (Computer Programming Technology). A.S., Indiana Central University; B.S., Indiana Central University.

Vivian Terry, Instructor (Culinary Arts). B.S., Alcorn State University; Culinary Apprenticeship, Delgado Community College.

Deanna S. Timmons, Master Instructor (Divisional Chairperson, Business, Office and Information Systems Technologies). B.S., University of Indianapolis; M.S., Butler University.

Human Services and Health Technologies

Diana Bennett, Instructor (Chairperson, Medical Assistant). B.S.N., DePauw University; M.S., DePauw University.

Kathleen Bogren, Instructor (Practical Nursing) at Methodist Hospital. B.S., Wayne State University.

Sheila Cagle, Senior Instructor (Practical Nursing). B.S.N., Indiana Central University; A.S.N., Indiana Central University; M.S.N., Indiana University.

Verna Coons, Master Instructor (Chairperson, Practical Nursing). B.S.N., Indiana University; M.S.N., Indiana State University.

Barbara Deady, Master Instructor (Practical Nursing) at St. Vincent's Hospital. B.S., Indiana State University.

Florence Elmore, Master Instructor (Chairperson, Surgical Technology). B.S., Indiana University -Purdue University at Indianapolis; M.S., Indiana University.

Ann Hill, Instructor (Practical Nursing). B.S., St. Louis University.

Kay Kavanagh, Master Instructor (Department Chairperson, Health Services). B.A., Marion College ; M.S., Indiana University.

Margaret Kiessling, Instructor (Practical Nursing). A.S.N., Medaille College; B.S.N., LaRoche College .

Kathleen Lee, Senior Instructor (Clinical Coordinator, Respiratory Therapy Technology). A.A.S., Indiana University; B.S., Muskingun College; M.S., Indiana University .

Dr. Mary Ann Lewis, (Practical Nursing). D.N.S., Indiana University; B.S.N., Marillac College; M.S., Butler University.

Peter Magnant, Master Instructor (Divisional Chairperson, Human Services and Health Technologies). A.A., Nursing, Indiana University; B.A., St. Mary's College; B.S., Indiana University; M.S., Indiana University.

Gayle Morrison, Instructor (Practical Nursing). B.S.N., Indiana University.

Kathi Niccum, Senior Instructor (Department Chairperson, Human Services Technology). B.A., Indiana State University; M.S., Indiana State University.

James Ohalla, Senior Instructor (Chairperson, Respiratory Therapy Technology). B.S., Georgia State University; M.S., Indiana University.

Beverly Parham, Senior Instructor (Practical Nursing) at St. Francis Hospital. B.S., Oklahoma State University; M.S., Indiana University.

Teresa Jablonski-Polk, Instructor (Program Chairperson, Human Services). B.A., University of Kentucky; B.A., Washington University.

Andrea Redford, Instructor (Human Services Technology). B.S., Ball State University ; M.A., Ball State University.

Linda Reed, Instructor (Medical Assisting Program). Diploma, Marion County General Hospital School of Nursing, ; B.S., Indiana University.

Kathleen Sheffler, (Developmental Faculty). B.S., University of Wyoming ; A.D.N., Southern Illinois University.

Sharon Sullivan, Instructor (Program Chairperson, Child Care Technology). B.S., Western College; M.A., Ball State University.

Jane Wallace, Senior Instructor (Practical Nursing) at Community Hospital. B.S., Ball State University .

Miles Wyatt, (Chairperson, Radiologic Technology). A.S., Indiana University; B.S., Indiana University.

Instructional Support Services

Rebecca Anderson, Instructor (Resource Center). B.S., Ball State University.

Connie Bolinger, Senior Instructor (Coordinator, Mathematics/Science). MAT Mathematics. Purdue; B.A., DePauw University.

Lee Churchill, Master Instructor (Communications/Developmental). B.A., Indiana University; M.S., University Wisconsin; M.A., University Wisconsin.

Michael Clippinger, Master Instructor (Chairperson, Instructional Support Services Division). M.A., Indiana University ; Certified Specialist in Developmental Education, Appalachian State University.

Michael Gorsline, Instructor (Mathematics/Developmental). B.A., Indiana University (South Bend); M.A., Ball State University.

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Addison Howe, Instructor (Communications/Developmental). B.A., University of Massachusetts; M.A., Indiana University.

Nancy Hubart-Lowe, Senior Instructor (Coordinator, Communications and Social Science). B.S., Indiana University; M.S., Indiana University.

Ali Lotfi, Instructor (Coordinator, Computer Assisted Instruction). B.A., Tehran University; M.S., Indiana University.

Susan Miller, Instructor (Developmental). B.S., Indiana University; M.S., Indiana University.

Cindy Morgan, Instructor and Counselor (Communications/Developmental). B.A., Indiana University; M.A., Indiana University.

Gary Phillips, Instructor (Communications) B.A., University of Northern Colorado; M.A., Southern Illinois University; Ph.D., Southern Illinois University.

Jan Strandjord, Instructor (Learning Development). B.A., University of Illinois; M.S., Indiana University.

Margaret Thomas, Instructor and Counselor (Developmental). B.S., Winthrop College.

Pat Thornburgh, Assistant Instructor (Mathematics/Developmental). A.S., Indiana University .

Kathy Ward, Instructor (Mathematics/Developmental). B.A., Molloy College; M.A., State University of New York.

Christopher Wood, Master Instructor (Assistant Skills Advancement Coordinator). B.A., Indiana University; M.A., Indiana University.

Administration

92

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Region 2- Northcentral
Regional Center
1534 West Sample Street
South Bend, Indiana 46619
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Region 3- Northeast
Regional Center
3800 N. Anthony Blvd.
Fort Wayne, Indiana 46805
Phone: (219) 482-9171

Region 4- Lafayette
Regional Center
3208 Ross Road
Lafayette, Indiana 47903
Phone: (317) 477-7401

Region 5- Kokomo
Regional Center
1815 East Morgan Street
Kokomo, Indiana 46901
Phone: (317) 459-0561

Region 6- Eastcentral
Regional Center
4100 Cowan Road
Muncie, Indiana 47302
Phone: (317) 289-2291

Region 7- Wabash Valley
Regional Center
7373 Dixie Bee Road
Terre Haute, Indiana 47802
Phone: (812) 299-1121

Region 8- Central Indiana
Regional Center
North Meridian Center
One West 26th Street
Indianapolis, Indiana 46208
Phone: **(317) 921-4800**

Region 9- Whitewater
Regional Center
2325 Chester Blvd.
Richmond, Indiana 47374
Phone: (317) 966-2656

**Region 10- Columbus/
        Bloomington**
Regional Center
4475 Central Avenue
Columbus, Indiana 47203
Phone: (812) 372-9925
Indiana Residents:
1-800-922-4838
Bloomington Center
Phone: (812) 332-1559

Region 11- Southeast
Regional Center
Highway 62 and
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Madison, Indiana 47250
Phone: (812) 265-2580

Region 12- Southwest
Regional Center
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Evansville, Indiana 47710
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Region 13- Southcentral
Regional Center
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